ARABIC ADJECTIVAL PHRASES: AN AGREE-BASED APPROACH

AHMAD I. ASSIRI


CENTRE FOR NFLD. STUDIES
MEMORIAL UNIVERSITY
OF NEWFOUNDLAND

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by

©Ahmad I. Assiri

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ABSTRACT

The main objective of this thesis is to account for the agreement (a)symmetries between nouns and the adjectives to which they relate in various adjective-containing structures in Modern Standard Arabic (MSA), where agreement includes phi-features (i.e., [Number] and [Gender]), Case, and definiteness. The investigation of such (a)symmetries of agreement raises some a number of theoretical issues and poses challenges to various syntactic frameworks. The investigation provides an Agree-based approach to the analysis of Arabic Adjectival Phrases (APs) by reconciling earlier approaches to the syntactic process of Agree. Specifically, it assumes Chomsky's (2005, 2008) Feature-Inheritance model of Agree, and adopts certain aspects of Agree developed in the works of Pesetsky and Torrego (2004, 2007).

The developed approach argues for the existence of two syntactic processes *Scan* and *Case-Reservation (Case-R)*, which are proved to be essential for the Agree relation established between phasal Probes (e.g., adjectival *a*P) and their Goals. Scan establishes links between lexical items, thus allowing these items to share features. Case-R, on the other hand, prevents a nominal, pronominal, or adjectival element which has participated in an Agree relation from receiving another Case value

The investigation of the data shows that the close association as well as the simultaneity

of valuation between Case and phi-features (as proposed in Chomsky's work) must be reconsidered, for phi- and Case features operate independently. This has implications for how we view the features present on adjectives from the numeration. As far as phi-features, the investigation shows that, depending on the syntactic structure they appear in, there are three type of adjectives in MSA. Adjectives in the first type come from the lexicon with empty phi-features (i.e., they have no phi-values for the features [Number] and [Gender]), which must receive these values in order for the derivation to converge. Adjectives in the second type come with only one valued phi-feature (i.e., has a value for the feature [Number]), but no value for the [Gender] feature. The third type of adjective comes from the lexicon with valued phi-features.

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

الْحَمْدُ لِلَّهِ الَّذِي لَهُ مَا فِي السَّمَاوَاتِ وَمَا فِي الْأَرْضِ وَلَهُ الْحَمْدُ فِي الْآخِرَةِ وَهُوَ الْحَكِيمُ الْخَبِيرُ

In the Name of Allah, Most Gracious, Most Merciful

Praise be to Allah, to Whom belong all things in the heavens and on earth: to Him be Praise in the Hereafter: and He is Full of Wisdom, acquainted with all things (Surat Saba?, Verse 1)

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DEDICATION

الى والديَ أطال الله بقائهما
و الى عزوز و خلود بارك الله فيهما

To may parents, may Allah extend their earthly lives

and

To Azooz and Khalood (my sons), may Allah bless them

Advisory Committee

Dr. Phil Branigan, Chair
Dr. Julie Brittain
Professor Vit Bubenik

Examination Committee

Dr. Faye Murrin, Chair
Professor Diane Massam
Professor Abbas Benmamoun
Dr. Carrie Dyck

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ABBREVIATIONS

1	First Person
2	Second Person
3	Third Person
AA	Asiri Arabic
AP	Adjectival Phrase
*a*P	Functional/phasal adjectival phrase
AC	Adjectival Construct
ACC	Accusative Case
AgrP	Agreement Phrase
AgrOP	Object Agreement Phrase
AgrSP	Subject Agreement Phrase
A-*f*	Adjectivalization feature
C	Complementizer (functional head)
Case-R	Case-Reservation
Comp	Complementizer (lexical item)
CP	Complementizer Phrase
CS	Construct State
DEF	Definite
DegP	Degree Phrase
DP	Determiner Phrase
EA	Egyptian Arabic
ECM	Exceptional Case Marking
EF	Edge Feature
EPP	Extended Projection Principle
F.	Feminine
FI	Feature-Inheritance
FL	Faculty of language
FocP	Focus Phrase
FP	Functional Phrase
GB	Government and Binding
GEN	Genitive Case
INDEF	Indefinite
IP	Inflectional Phrase
JA	Jordanian Arabic
LF	Logical Form
LI	Lexical Item
M.	Masculine
MA	Moroccan Arabic
MP	Minimalist Program
MSA	Modern Standard Arabic
NegP	Negation Phrase
NOM	Nominative Case
NP	Noun Phrase
*n*P	Functional/phasal noun phrase
N-*f*	Nominalization feature
Obj	Object
P&P	Principles and Parameters
PF	Phonological Form
PIC	Phase Impenetrability Condition
Pl.	Plural
Poss	Possessor
PP	Prepositional Phrase
PrP	Predicate Phrase
PS	Pronoun of Separation
QP	Quantifier Phrase
S.	Singular
SC	Small Clause
SMT	Strong Minimalist Thesis
Spec	Specifier
SVO	Subject Verb Object
TP	Tense Phrase
VP	Verb Phrase
*v*P	Functional/phasal verb phrase

Symbol	Transcription
ʔ	glottal stop
b	voiced bilabial stop
t	voiceless dental fricative
θ	voiceless interdental fricative
j	voiced palatal fricative/affricate
ħ	voiceless pharyngeal fricative
x	voiceless velar fricative
d	voiceless alveolar stop
ð	voiced interdental fricative
r	voiced alveolar flap
z	voiced alveolar fricative
s	voiceless alveolar fricative
š	voiceless palatal fricative
ṣ	voiceless alveolar fricative (emphatic)
ḍ	voiced alveolar stop (emphatic)
ṭ	voiceless alveolar fricative (emphatic)
ḍ	voiced interdental fricative (emphatic)
ʕ	voiced pharyngeal fricative
ɣ	voiced velar fricative
f	voiceless labiodental fricative

q	voiced uvular stop
k	voiceless velar stop
l	voiced alveolar lateral
m	voiced bilabial nasal
n	voiced alveolar nasal
h	voiceless glottal fricative
w	voiced labial glide
y	voiced palatal glide

Vowels:

Short	**Long**	
a	aa	central open
i	ii	front closed
u	uu	back closed rounded

Chapter 1

On Case and agreement properties in Arabic adjectival constructions

1. Introduction

Adjectives in Classical and/or Modern Standard Arabic[1] (MSA) exhibit an interesting range of ways to agree with the nouns to which they apply, where agreement generally includes [Number], [Gender], Case, and definiteness. Within a single construction, adjectives show various levels of agreement with the noun they apply to, depending on the semantic relation adjectives establish with this noun. The investigation of such agreement asymmetries in Arabic raises a number of theoretical issues and poses challenges to various syntactic frameworks.

The main objective of this thesis is to address these challenges and to provide a better characterization of the various agreement relations which hold between nouns and adjectives in Arabic. To accomplish this objective, I develop an Agree-based approach to Case and agreement for Arabic adjectives. In my approach, I adopt (and modify) a recent version of Chomsky's theory of Agree: the Feature-Inheritance model (2005, 2007, 2008). Additionally, I adopt certain aspects of Agree developed in the works of Pesetsky and

1 Unless otherwise indicated, all the data cited in this thesis come from MSA. Also, the term *Arabic* will be used to refer to either Classical or MSA varieties of Arabic.

Torrego (2001, 2004, 2007).

The proposal I develop has at its core the idea that Arabic Adjectival Phrases (APs) can be analyzed as phases in the sense of Chomsky (2001). I argue that Case in nominal and/or adjectival elements in Arabic is valued through an Agree relation between these elements and a phasal Probe, thereby rejecting alternative accounts of these Arabic data which argue for default Case assignment (e.g., Fassi-Fehri, 1993; Mohammad, 2000; & traditional Arab grammarians).

I argue that by analogy with phasal *v*P and CP, certain adjectival constructions (i.e., predicative adjectives) can be analyzed as phasal *a*P. The head *a* bears a set of unvalued phi-features, in addition to valued [CASE]; thus, in order to value its unvalued phi-features, the head *a* enters into an Agree relation with a Goal which can value these features.

The analysis shows that the close association between Case and agreement features, as proposed in Chomsky (2005), can be dissociated in certain Agree relations. This has implications for our view of features which are present on adjectives from the numeration.

1.1 Issues

Adjectives in Arabic are generally placed after the noun to which they apply. Consider the following verbless structures, where the adjectives *mariiḍ* 'sick(M.S.)' and *mariiḍ-ah* 'sick-F.S.' appear after the nouns *ar-rajul* 'def-man' and *al-fataah* 'def-girl', respectively:[2]

(1) ar-rajul-u mariiḍ-u-n
DEF-man-NOM sick(M.S.)-NOM-INDEF
'The man is sick'

(2) al-fataat-u mariiḍ-at-u-n[3]
DEF-girl-NOM sick-F.S.-NOM-INDEF
'The girl is sick'

Arabic adjectives (such as *mariiḍ* 'sick(M.S.)' and *mariiḍ-ah* 'sick-F.S.') show agreement with the nouns in the subject position, as can be seen in (1) and (2); these adjectives agree with the noun *ar-rajul* 'def-man' and *al-fataah* 'def-girl' in [Gender] (masculine in (1), but feminine in (2)), [Number] (i.e., singular), and Case (i.e., they bear nominative Case).[4]

2 Throughout this thesis, the transliteration of the examples will be mine unless otherwise indicated.

3 A phonological rule changes the [t] (which marks the feminine gender) in the noun *al-fataah* and the adjective *mariiḍ-ah* in (2) into [h], when pausing at the end of pronouncing it.

4 Note that a limited number of adjectives derived from certain morphological pattern do not show full agreement; that is, they do not agree in [Gender]. For example, adjectives such as *ṣabuur* 'patient(M)', *šakuur* 'thankful(M)', which are derived from the morphological pattern *CaCuuC*, can be used with [feminine] nouns. Also, adjectives modifying [masculine] plural *inanimate* nouns, such as *šawaariʕ* 'streets', can be plural (as in (i)) and or singular (as in (ii)):

(i) šawaariʕ-u waasiʕ-aat-u-n
streets-NOM wide-F.Pl.-NOM-INDEF
'wide streets'

(ii) šawaariʕ-u waasiʕ-at-u-n

However, as far as definiteness, each element in the sentence is marked differently (i.e., the nouns are definite, whereas the adjectives are indefinite).

The data in (1) and (2) can be introduced by the complementizer *ʔinna* 'that':

(3) ʔinna ar-rajul-**a** mariiḍ-u-n
that DEF-man-**ACC** sick(M.S.)-NOM-INDEF
'(It is confirmed) that the man is sick'

Following traditional Arab grammarians[5] (e.g., Ibn Hishaam [d. 1360] (as cited in Abdel-Hamiid, 2003)), many modern researchers (e.g., Al-Nadiri, 2005; Bedeiwi & Ahmad, 1996; Hasan, 1976) argue that the complementizer *ʔinna* assigns two Cases to the following nominal (or adjectival) elements: accusative Case to the noun *rajul* 'man' in the subject position, and nominative[6] to the adjective *mariiḍ* 'sick(M.S.)' in the following position.

A relevant structure can also be introduced by the auxiliary *kaana* 'was', as the following example shows:

streets-NOM wide-F.S.-NOM-INDEF (Al-Nadiri, 2005, p. 565)

5 It should be noted that the number in brackets which appears next to traditional grammarians represents the death date for that person. Unless otherwise stated, all death dates come from *The Encyclopedia of Arabic language and linguistics* (Versteegh, (Ed.), 2006).

6 However, as will be argued in this thesis, the claim that *ʔinna* 'that' is responsible for the nominative Case on the adjective is not the best account of the facts (see, Al-Shamrani, 1994, for a similar conclusion).

(4) kaana ar-rajul-u mariiḍ-**a**-n
Was DEF-man-NOM sick(M.S.)-**ACC**-INDEF
'The man was sick'

The adjective *mariiḍ* 'sick(M.S.)' in this example bears accusative Case, which appears to be assigned/checked[7] by the auxiliary *kaana* (cf., (3)).

Unlike the previous examples, where a single adjective appears, the head noun in (5) is followed by two adjectives:[8]

(5) ar-rajul-u aṭ-ṭawiil-u mariiḍ-u-n
DEF-man-NOM DEF-tall(M.S.)-NOM sick(M.S.)-NOM-INDEF
'The tall man is sick'

The first adjective *aṭ-ṭawiil* 'DEF-tall(M.S.)' agrees with the head noun *ar-rajul* 'DEF-man' in [Gender], [Number], definiteness, and Case (i.e., both are masculine, singular, definite, and bear nominative Case). Likewise, the second adjective *mariiḍ* 'sick(M.S.)' agrees with the same head noun in [Gender], [Number], and Case, but not in definiteness; the adjective is indefinite.

7 At this point in the discussion, no distinction shall be made between the mechanics of Case-*assignment* and Case-*checking*, thus both terms will be used interchangeably unless otherwise clarified.

8 Following convention, the first adjective will be referred to as *attributive*, while the second will be called *predicative* (more on this classification is found in section 3. of this chapter).

Besides the apparent semantic differences, consider the other differences between (5), on the one hand and (6), where it is preceded by the complementizer *ʔinna* 'that', and (7) where it is preceded by the verb *kaana* 'was', on the other:

(6) ʔinna ar-rajul-**a** aṭ-ṭawiil-**a** mariiḍ-u-n
That DEF-man-**ACC** DEF-tall(M.S.)-**ACC** sick(M.S.)-NOM-INDEF
'(It is confirmed) that the tall man is sick'

(7) kaana ar-rajul-u aṭ-ṭawiil-u mariiḍ-**a**-n
was DEF-man-NOM DEF-tall(M.S.)-NOM sick(M.S.)-**ACC**-INDEF
'The tall man was sick'

In examples (6) and (7), the head noun *ar-rajul* 'DEF-man' is followed by two adjectives. The first, attributive adjective *aṭ-ṭawiil* 'DEF-tall(M.S.)' agrees with the noun it modifies in [Number], [Gender], Case (both bear the same Case morphology), and definiteness. The second, predicative adjective *mariiḍ* 'sick(M.S.)', on the other hand, fails to agree with the subject noun *ar-rajul* 'DEF-man' in Case and in definiteness (i.e., it is indefinite).

The conclusion to be drawn from these examples is that in the absence of *overt* Case assigners such as *ʔinna* and *kaana*, the adjectives show agreement with the nouns they apply to in [Gender], [Number], and Case, regardless of the relationship in which the adjective stands relative to the noun (i.e., predicative or attributive). Adjectives thus vary when it comes to agreement in definiteness: only attributive adjectives show full

agreement.

Having no overt Case assigners to which the nominative Cases on both the noun and the adjective can be attributed, the verbless sentences in (1) and (5) resemble the so-called Zero or Null Copula constructions in languages such as Hebrew, Russian, and Turkish. Throughout this thesis, such sentences will be referred to as Zero Copula/verbless structures.

The data presented thus far raise the following questions:

1. In the absence of a potential Case assigner/checker (as in (1) and (5)), what is the source of the nominative Case on both the noun and the adjective(s)?
2. How is full agreement obtained between nouns and attributive adjectives (i.e., under which syntactic mechanism)?
3. How can lack of agreement (in definiteness and sometimes Case) between the noun and the adjective be explained in constructions with predicative adjectives?
4. Can agreement in Case, [Gender], [Number], and definiteness be accounted for in a unified way? In other words, how many processes does the syntactic computational system utilize in order to produce the agreement (a)symmetries shown in the Arabic data?

As will be shown later in the discussion, while existing proposals have attempted to

answer some of these questions using a variety of syntactic analyses, no complete nor satisfactory answers have been provided. Therefore, the version of an Agree-based analysis developed here will help answer these questions by providing a unified analysis of the data which will take into account the noun-adjective (dis)agreement, not only in [Gender] and [Number], but also in definiteness and Case.

1.2 Scope and organization of the thesis

Before we delve into the details of the main theoretical framework adopted in this thesis, the sources of the data as well as the methodology are laid out in section 1.3. The relevant morphology of both nouns and adjectives in Arabic (e.g., [Number], [Gender], Case, and definiteness) is provided in section 2., followed by a brief characterization of the basic syntactic and semantic properties Arabic adjectival elements exhibit (section 3.).

The main theoretical assumptions adopted are presented in chapter 2. There, I provide an overview of the general architecture of the Minimalist Program (MP), tracking the principal (relevant) developments the program has undergone, including the Agree theory. Chomsky's amendments to Agree theory has produced one version of Agree: Feature-Inheritance (FI), which will be adopted in this thesis. Another Agree-based syntactic framework, which adopts and builds on Chomsky's (2000, 2001) Probe-Goal theory, has been proposed by Pesetsky and Torrego (2001, 2004, 2007). This work will also be

introduced in chapter 2. The same chapter also discusses the challenges Arabic data poses for both Agree frameworks, thus calling for reconsideration of and/or modification to some aspects of Agree in its current version(s).

Chapter 3 provides an overview of selected pre-MP and MP-based analyses of Arabic adjectives in various syntactic structures such as Zero Copula and Small Clauses. Some of the analyses go back as far as the traditional works of some of the renowned grammarians of Classical Arabic (e.g., Sibaweihi, [d.796]). I attempt to show the weaknesses and the disadvantages these analyses embody with respect to the questions the data raises (in chapter 1) for any working theory of Arabic APs. At the end of chapter 3, some of the recent Agree-based analyses for Arabic data are presented. Following the same strategy I use for the other analyses, I highlight the challenges Arabic APs pose for the proposed (Agree-based) analyses, and conclude that in their current form, these analyses would not be able to account for the agreement (a)symmetries between the noun and the adjective to which it applies, and a new theory is needed.

In chapter 4, I present my theory of Agree. I develop two syntactic processes essential for Agree relations: The first process is Scan, which basically means that a syntactic element Scans its c-commanding domain and establishes a link (or links) with one or more syntactic element. I theorize that the established links between these elements facilitate the copying or transference of certain information available on one element to the other linked element, where information includes phi and definiteness features (and arguably

Case values). The second syntactic process I propose is Case-Reservation (Case-R). This process guarantees that no other Case value will change (or override) the Case value reserved by a phasal Probe. I will argue for the existence of an adjectival, phasal head *a*, which bears a valued [CASE] feature with nominative value in addition to unvalued phi-features ([*u*φ]) and EF. Under the FI model, this head selects and transfers all of these features to a proxy head. Moreover, it will be shown that without implementing these syntactic processes, Agree will not be able to account for the agreement (a)symmetries in Arabic APs. The applicability of these two processes in various adjective-containing constructions in Arabic (e.g., Zero Copula, Small Clauses, etc) will be demonstrated in this chapter.

In chapter 5, I extend the approach developed in chapter 4 to other adjective-containing syntactic environments. I present an Agree-based analysis for the Construct State (CS) construction in Arabic. The chapter begins by introducing an overview of some of the previous analyses proposed for the CS in Arabic and, for comparison, Modern Hebrew. In my analysis of the CS, I will argue that the genitive Case value on the DP possessor reflects a successful Agree relation between a phasal Probe (headed by *n*) and the Goal DP possessor. The analysis accounts for the phenomenon of *definiteness inheritance* in Semitic CSs, whereby definiteness on the head noun of the CS is determined by that of the DP possessor. The analysis shows that the head noun executes multiple steps of movement until it reaches the phasal head *n*.

Chapter 6 extends the analysis developed in chapters 4 and 5 to a different type of construction in Arabic-- *the Indirect Attribute*. The adjective in this construction exhibits unique behaviour: It semantically relates to a nominal element, but syntactically agrees with another element in the structure. Also in chapter 6, I introduce and discuss the behaviour of adjectives in a sub-type of the Indirect Attribute called the *Adjectival Construct* (AC). The adjective in AC constructions shows similarities with nominal CSs: It forms a CS-like structure by selecting a genitive DP complement. I will argue that, like nominal heads, the adjectival head in an AC construction raises multiply to the phasal head *n*.

Chapter 7 presents *participles* as a another class of adjectives. Arabic participles show a dual syntactic function: On the one hand, they inflect for Case, agreement, and definiteness; on the other hand, they are able to assign accusative Case to their complement DPs. In addition, like ACs, participles can select genitive DP complements, forming a CS-like structure. For participles, I will extend the proposals developed in the previous chapters in order to account for the dual behaviour of this class of adjectives. I will show that participles enter the derivation as verbs, but become participles at a certain point in the structure. Specifically, I will argue that the verbal root becomes participial once it raises to a head carrying an abstract Adjectivalizer feature (A-*f*). The agreement morphosyntax of *maṣdars* will also be considered in this chapter. Like participles, the words in this class show verbal as well as nominal characteristics. Specifically, when used verbally, they are able to assign accusative Case values to their DP complements;

however, when used nominally, they select genitive DP complements, thus producing CS-like constructions. In addition, like participles, maṣdars inflect for Case, agreement, and definiteness. To account for both verbal and nominal behaviours of maṣdars, I extend the analysis proposed for participles to maṣdars. I show that when used verbally, a maṣdar enters the derivation as a verbal root which is converted into a nominal element (or maṣdar) at a certain point in the derivation; that is, the verbal root raises to a head bearing an abstract, nominalization feature (N-*f*).

Finally, it should be made clear that this thesis takes as its object of study constructions which have been extensively studied (e.g., Zero Copula, the CS, etc) across various theoretical approaches; the reader should thus expect to see detailed discussion of the relevant literature. I provide an extensive literature review in order to identify where these analyses have or have not succeeded in addressing Case and agreement properties in adjectival elements. Also, for ease of exposition, each chapter generally starts with an overview of the construction(s) to be discussed.

1.3 Data and methodology

This research is concerned mainly with data found in Classical and/or MSA. Classical Arabic[9] has flourished since the inception of Islam in the Arabian Peninsula (more than

9 Holes (2004, p. 5) states that Classical Arabic shows some differences from MSA in the "vocabulary and phraseology"; however, not a lot of difference is noted as far as the syntax is concerned. Relatively,

fourteen hundred years ago), and the later expansion of the Islamic state to include huge territories, different ethnicities, and cultures across three continents. Classical Arabic then became the official and/or most widely spoken language in these parts of the world.

Today, numerous varieties of Arabic are recognized: Besides MSA, there are hundreds of colloquial varieties. These local varieties of Arabic are the main medium of everyday communication, constituting the native variety of Arabic to which children are exposed.

Despite that fact that no one can claim MSA to be his/her native variety of Arabic, MSA holds a high status in the sense that it is considered the official language of all twenty three Arabic-speaking countries, and the elevated in status by virtue of its being the language of the Muslims' sacred book the Qur'an.

One reason for limiting the current investigation to constructions found in Classical and MSA varieties and excluding any data from the colloquial varieties (except for expository and/or comparison purposes) is that these varieties lack *overt* Case morphology. Since my focus is on Case and agreement, these varieties lie outside the scope of this research.

Despite the large number of accessible Arabic grammar references, it is sometimes difficult to judge the well-formedness of a certain construction. To overcome this

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Classical Arabic can be thought of as the variety of the Qur'an and the pre-Islamic literary or poetic forms.

problem, I have been in contact with an Arabic-speaking consultant whose academic specialty is in Arabic linguistics.[10]

Across Arabic-speaking countries, MSA is used as a medium of instruction in most educational and academic institutes. Moreover, a large number of journals and TV programs (including children's animated films), news, and political and official announcements are produced in this variety of Arabic. With this much of exposure to MSA, children (in pre-school age) are introduced to this variety, leading to the expectation that through the children's linguistic environment,[11] proper Case and agreement aspects in MSA could be acquired (i.e., enough exposure for UG to generate).

As mentioned earlier, the data comes from Classical and/or MSA; in particular, it comes from various traditional and contemporary Arabic grammar/reference books.[12] Other parts of the data, however, are found in the existing scholarly literature references, including works in the generative tradition.

Despite the differences MSA and the spoken varieties of Arabic show, some of the constructions I focus on in this thesis are widely productive and used in today's spoken

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10 Thanks are due to Dr. Mohammad Alrobaei, Al-Qasiim University, Saudi Arabia.

11 According to Holes (2004), the majority of Arab children become exposed to the Classical variety at an early age (i.e., around five or six), through attending mosques and participating in prayers. To Holes, this "leaves an indelible impression" on children's lives (p. 4).

12 In traditional Arabic sources, researchers have produced extensive, well-documented descriptions of the morphosyntactic aspects of Arabic relying on Qur'anic verses and poetic forms (see, e.g., Ibn Yaʕiiš, [d. 1245]; Jurjaani, [d. 1078]; Sibaweihi, [d. 796]).

dialects of Arabic. For example, consider the following examples from Asiri Arabic,[13] which correspond to example (5) above:

(8) ir-rajjaal iṭ-ṭiwill mariiḍ
DEF-man DEF-tall(M.S.) sick(M.S.)
'The tall man is sick' (Asiri Arabic)

(9) il-bint iṭ-ṭiwiil-ah mariiḍ-ah
DEF-girl DEF-tall-F.S. Sick-F.S.
'The tall girl is sick' (Asiri Arabic)

Like their corresponding Classical and/or MSA adjectives, *iṭ-ṭiwiil, iṭ-ṭiwiil-ah, mariiḍ* and *mariiḍ-ah* show agreement in [Number], [Gender], and definiteness (when used attributively) with the nouns to which they apply. Notice, however, that no Case appear on any of the nominal or adjectival elements in these examples.[14]

13 Asiri Arabic is the researcher's native dialect, which is spoken in southwestern Saudi Arabia. Note that unless otherwise indicated, all Asiri Arabic data are provided by myself.

14 However, this does not necessarily mean that no *abstract* Cases exist in colloquial varieties of Arabic (see, Shlonsky, 2004, p. 1503, for *abstract* genitive Cases in varieties of Hebrew and Arabic).

2. *Noun and Adjective morphology*

2.1 Noun Morphology

Like other Semitic languages, the roots of most Arabic lexical items consist of three consonants. In order to derive words, these consonants are supported by vowels which constitute different patterns. From the root *ktb,* for example, by inserting the vowel pattern *i-aa* between these three consonants we derive the singular, masculine noun *kitaab* 'book' (see, e.g., Fassi-Fehri, 1993; Hasan, 1976; Holes, 2004; Nuur id-diin, 2003).

Further derivations can be created in the same way by inserting different vocalic patterns (e.g., *aa-i*, yielding the word *kaatib* 'writer', *u-u* yielding the plural form *kutub* 'books', and so on). These derived words can further be supplemented with affixes which denote definiteness, Case, [Gender], and, in certain cases, [Number]. The formation of these nominal properties will be discussed next.

2.1.1. Definiteness

Definiteness on Arabic nouns is signalled by the prefixal definite article *al-*. Indefiniteness, on the other hand, is signalled by the suffix *–n*;[15] see, for example, Table 1:

15 This suffix is widely known in the Arabic literature as *tanwiin* or 'nunnation'.

Table 1

Definiteness

Noun	Definite	Indefinite
kitaab 'book'	**al**-kitaab	kitaab-u-**n**
	DEF-book	book-NOM-**INDEF**
saħaab 'clouds'	**as-s**aħaab[16]	saħaab-u-**n**
	DEF-cloud	cloud-NOM-**INDEF**

As we might expect, the definite article *al-* and the indefinite marker *–n* are in complementary distribution:

(10) ****al***-kitaab-u-***n***
DEF-book-NOM-***INDEF***

2.1.2. Case

Depending on the syntactic context, there are three Cases in Arabic: nominative, accusative, and genitive. For most nouns, the Case endings are indicated by the short vowels ***–u*** (for nominative), ***-a*** (for accusative), and ***–i*** (for genitive). As will be argued, these Cases are structural; I will follow Kremers (2003) and assume that there are no inherent Cases in Arabic.

16 A phonological rule of assimilation occurs between lateral [l] in *al-* and the following coronal segments; for example, *al + šams* 'sun' = *aš-šams* 'the sun', where [l] assimilates to [š], thus producing a geminate consonant. Furthermore, the definite article *al-* can be seen as an allomorph.

In terms of suffix order, Case endings precede the indefiniteness marker *–n* as Table 2 shows:

Table 2

Cases and definiteness

	nominative	**accusative**	**genitive**
Definite	al-kitaab-**u** DEF-book-**NOM**	al-kitaab-**a** DEF-book-**ACC**	al-kitaab-**i** DEF-book-**GEN**
Indefinite	kitaab-**u**-n book-**NOM**-INDEF	kitaab-**a**-n book-**ACC**-INDEF	kitaab-**i**-n book-**GEN**-INDEF

Nouns (e.g., *kitaab* 'book' in Table 2) which are inflected for the three different Case endings are known in the literature as 'triptotic' (as opposed to 'diptotic' nouns which show only two Case endings (see, e.g., Holes, 2004; Kremers, 2003)).

The word *ṣaħraa?* 'desert', for instance, takes the Case ending *–a* for the genitive as well as for the accusative (when it is in the indefinite form). Furthermore, the word *ṣaħraa?* does not bear the indefinite marker *–n*. However, when it is definite, it bears the same Case endings as in the 'triptotic' type, see Table 3:

Table 3

Case and definiteness

	nominative	**accusative**	**genitive**
Definite	aṣ-ṣaħraa?-u DEF-desert-NOM	aṣ-ṣaħraa?-a DEF-desert-ACC	aṣ-ṣaħraa?-**i** DEF-desert-**GEN**
Indefinite	ṣaħraa?-u desert-NOM	ṣaħraa?-a desert-ACC	ṣaħraa?-**a** desert-**ACC**

It seems that the word *ṣaħraa?*, like any other 'triptotic' word, has three Cases (even when it is in the indefinite form); however, since two of these Cases (i.e, genitive and accusative) are phonologically identical, we can assume that the morphological distinction between these Cases in this particular type of nouns is neutralized.

2.1.3. Gender

There are two *gender* classes in Arabic: masculine and feminine. Masculine nouns do not have overt gender morphology (as we have seen with the word *kitaab,* which is masculine (and singular)); feminine gender is signalled by the ending *–at.* In terms of order, this suffix always precedes the Case and indefiniteness endings on a noun, as in *šajar-**at**-u-n* 'tree-**F.S.**-NOM-INDEF'[17]

17 The suffix *-at* indicates singular [Number], in addition to [Gender].

2.1.4. Number

There is a three-way *number* contrast in Arabic: singular, dual, and plural.

2.1.4.1. Plural formation

Depending on the way it is formed, plural formation of Arabic nouns comes in two types: 'broken' and 'sound' plural.

a. Broken plurals are formed by applying different vowel patterns to consonantal roots. The plural form of the word *kitaab* '(one) book', for example, is formed by applying the vocalic pattern of *u-u* to the root *ktb*; in the same way, the vocalic pattern *u-uu* is added to the root *qlb* to form the plural word *quluub* 'hearts', as in Table 4:

Table 4

Broken plural

Root	**Singular**	**Plural**
ktb	kitaab 'book'	kutub 'books'
qlb	qalb 'heart'	quluub 'hearts'

Like their singular, 'triptotic' forms, the plural forms *kutub* 'books' and *quluub* 'hearts' take the same Case endings and indefiniteness marker:

Table 5

Case and definiteness in broken plurals

Indefinite plural form	**nominative**	**accusative**	**genitive**
kutub	kutub-u-n books-NOM-INDEF	kutub-a-n books-ACC-INDEF	kutub-i-n books-GEN-INDEF
quluub	quluub-u-n hearts-NOM-INDEF	quluub-a-n hearts-ACC-INDEF	quluub-i-n hearts-GEN-INDEF

b. Sound plurals are formed by adding plural suffixes to the noun roots without changing the internal vocalic pattern of the word. The suffixes ***–uun*** and ***–aat*** are used to form the masculine and feminine sound plural forms, respectively:

Table 6

Sound plural

	Plural (masculine)	**Plural (feminine)**
muʕallim 'teacher'	muʕallim-uun teacher-M.Pl.(NOM)	muʕallim-aat teacher-F.Pl.(NOM)

In addition to the plural form, the masculine suffix ***–uun*** encodes nominative Case. Accusative and genitive Cases, on the other hand, are encoded by the suffix ***–iin*** on the plural form:

Table 7

Sound Plural and Case

	nominative	**accusative/genitive**
al-muʕallim-uun 'the (male) teachers'	al-muʕallim-uun DEF-teacher-M.Pl.(NOM)	al-muʕallim-iin DEF-teacher-M.Pl.(ACC/GEN)

For the feminine forms, on the other hand, Case and [Number] morphology is kept separate, as shown in Table 8:

Table 8

Feminine sound plural and Case

	nominative	**accusative/genitive**
al-muʕallim-aat 'the (female) teachers'	al-muʕallim-aat-u DEF-teacher-F.Pl.-NOM	al-muʕallim-aat-i DEF-teacher-F.Pl.-ACC/GEN

Notice that the feminine sound plural form takes the indefiniteness marker *–n*, but the masculine sound plural does not:

Table 9

Sound plural and definiteness

	Definite	**Indefinite**
Masculine sound plural	al-muʕallim-uun DEF-teacher-M.Pl.(NOM)	muʕallim-uun teacher-M.Pl.(NOM)
Female sound plural	al-muʕallim-aat-u DEF-teacher-F.Pl.-NOM	muʕallim-aat-u-**n** teacher-F.Pl.-NOM-**INDEF**

2.1.4.2. Dual formation

The dual is formed by adding the suffix *–**aan*** to masculine or feminine nouns:

Table 10

Dual forms

	Two male teachers	**Two female teachers**
muʕallim 'teacher'	muʕallim-aan teacher-M.Dual(NOM)	muʕallim-at-aan teacher-F.-Dual(NOM)

In addition, the suffix *–aan* marks the nominative Case morphology on dual forms. The accusative as well as genitive Cases on dual forms, however, are marked by the suffix *–**ajn***:

Table 11

Dual forms and Cases

	nominative	**accusative/genitive**
Dual masculine	muʕallim-aan teacher-M.Dual(NOM)	muʕallim-ajn teacher-M.Dual(ACC/GEN)
Dual feminine	muʕallim-at-aan teacher-F.-Dual(NOM)	muʕallim-at-ajn teacher-F.-Dual(ACC/GEN)

Like the masculine sound plural form, the dual form does not take the indefiniteness marker ***–n*:**

Table 12

Dual forms and definiteness

	Definite	**Indefinite**
Dual Masculine	al-muʕallim-aan DEF-teacher-M.Dual(NOM)	muʕallim-aan teacher-M.Dual(NOM)
Dual Feminine	al-muʕallim-at-aan DEF-teacher-F.-Dual(NOM)	muʕallim-at-aan teacher-F.-Dual(NOM)

In the next sub-section, we will consider the morphology of Arabic adjectives, which are identical to nouns, as far as the mechanism of word formation, including [Number], [Gender], definiteness, and Case morphological properties.

2.2 Adjectival Morphology

According to grammarians of Arabic, verbs, nouns, and particles (or *ħuruuf*) constitute the main classes of words. Under this classification, adjectives are not considered independent parts of speech; but rather, a subpart of nouns called *muštaqaat* 'derived words'.

Al-Shamrani (1994) states that the inclusion of adjectives under the class of nouns is motivated by the formal as well as functional similarities both nouns and adjectives exhibit. Specifically, based on their form, adjectives do not have independent morphological patterns which would distinguish them from nouns; additionally, in a striking similarity to nouns, adjectives bear Case inflections (in addition to (in)definiteness, [Number], and [Gender] affixes). Adjectives, for example, behave like nouns when forming broken plurals as in Table 13:

Table 13

Broken plural formation in nouns and adjectives

	Singular	**Plural**
Noun	raʔs 'head'	ruʔuus
	maaʔidah 'table'	mawaaʔid
Adjective	faqiih 'knowledgeable'	fuqahaaʔ
	naaʔim 'asleep'	nyaam

The second motivation for not treating adjectives as an independent class of words is reflected in the fact that adjectives function, syntactically, like nouns. In other words, traditional grammarians noted that adjectives, like nouns, could sometimes occur in predicative or attributive positions. In traditional references, once in a predicative position, adjectives are either included in sections dealing with *mubtada? wa xabar* 'subject and predicate' constructions,[18] or they may be included under sections dealing with *ħaal* 'circumstantial adverbs.' Nevertheless, when adjectives occur attributively, they are included under *nuʕuut* 'qualifiers/modifiers' section.

As will be shown in chapters 6 and 7, adjectives have also been noted to show similarities to their derivationally related verbs in the sense that they show transitive versus intransitive features as well as passive versus active properties. In addition, adjectives, like nouns, can form a CS structure with (linearly) following nouns: *al-ʔiḍafah al-lafðiyyah* 'pseudo-Construct State'.[19]

According to Fassi-Fehri (1993), adjectives in Arabic can be divided into two main categories: pure adjectives, and participle adjectives. Both types of adjective can be differentiated on the basis of their semantic (i.e., aspectual-temporal), syntactic, and morphological characteristics.

18 The 'subject-predicate' construction is discussed in chapter 3.
19 The Construct State construction is discussed in chapter 5.

2.2.1. Pure adjectives

As far as their aspectual-semantic properties, pure adjectives describe permanent situations, states or conditions, thus they are sometimes called *stative* adjectives. Based on morphological criteria, Fassi-Fehri (1993) refers to this type of adjective as 'non-atomic' in the sense that adjectives can be derived from other lexical forms (cf. English adjectives such as *fast,* which are 'atomic' or non-derived).

Like nouns, adjectives in Arabic are formed from consonantal roots into which vowel patterns are inserted. For example, the adjectives *kabiir* 'big', *ħaziin* 'sad', and *mariiḍ* 'sick' are derived by adding the vocalic pattern *a-ii* to the consonantal roots *kbr, ħzn,* and *mrḍ*, respectively.

Almost all Arabic adjectives have verbal counterparts, a fact which led traditional grammarians to assume that both (verbs and adjectives) were derived from the same root (i.e., *maṣdar*[20]) (see, Fassi-Fehri, 1993). Inflected verbs, for example, can be derived from the roots *kbr, ħzn,* and *mrḍ*, thus producing *kabura* 'he became big', *ħazuna* 'he became sad', and *mariḍa* 'he became sick.'

2.2.2. Participles[21]

Unlike pure adjectives, participles describe non-stative (i.e., dynamic and changing)

20 *Maṣdars* are considered in chapter 7.
21 Participles are analyzed in chapter 7.

events and/or conditions. In terms of their morphology, like pure adjectives, participles are derived by adding vocalic patterns to consonantal roots; however, the vowel pattern for participles can sometimes be different from that of pure adjectives. For example, from the vocalic pattern *CaaCiC* and the consonantal root *nfʕ* the participle *naafiʕ* 'helping/helpful' is derived.

Participle adjectives can be active or passive as in the following examples:

(11) al-kitaab-u naafiʕ-u-n
DEF-book-NOM helping-NOM-INDEF
'the book is helpful'

(12) ar-rajul-u maʕruuf-u-n ṭabʕ-u-hu
DEF-man-NOM known-NOM-INDEF disposition-NOM-his
'the man's disposition is known'

The participle *naafiʕ* 'helping' is an active participle; whereas, *maʕruuf* 'known' is a passive participle.

Unlike pure or stative adjectives, participle adjectives show some verbal features; for example, they can receive a future interpretation, although they have no overt tense inflection for future (Fassi-Fehri, 1993, p, 152):

(13) al-walad-u ʔaakil-u at-tufaaħ-at-a
DEF-boy-NOM eating-NOM DEF-apple-F.S.-ACC
'the boy is eating/ will eat the apple'

(14) ʔanaa musaafir-u-n
I traveling-NOM-INDEF
'I am travelling/ will travel'

The participles *ʔaakil* 'eating' and *musaafir* 'traveling' can be understood to bear both present and future readings. Having present and future interpretations, these participles become compatible with future adverbs as the grammaticality of the following example shows:

(15) ʔanaa musaafir-u-n l-ʔaana/ ɣadan
I traveling-NOM-INDEF now/ tomorrow
'I am travelling/ will travel'

Having more verbal characteristics than pure adjectives, participles have been analyzed as deverbal adjectives (see, e.g., Fassi-Fehri, 1993). Compare these examples with (1), repeated here as (16):

(16) ar-rajul-u mariiḍ-u-n
DEF-man-NOM sick-NOM-INDEF
'the man is sick'

The adjective *mariiḍ* in this example is a stative (predicative) adjective. The sentence conveys present tense only; it is not compatible with past and future adverbs, as can be seen from the ungrammaticality of the following examples:

(17) *ar-rajul-u mariiḍ-u-n ʔamsi
DEF-man-NOM sick-NOM-INDEF yesterday
*'the man is sick yesterday'

(18) *ar-rajul-u mariiḍ-u-n ɣadan
DEF-man-NOM sick-NOM-INDEF tomorrow
*'the man is sick tomorrow'

Thus, to convey a past tense meaning, the copular/auxiliary verb *kaana* is used, as in example (4), repeated here as (19):

(19) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick-ACC-INDEF
'the man was sick'

A comparable structure with a future tense can be produced with the prefix *sa-* or the word *sawfa*, which could be taken to mean *will* in English, preceding the copular verb *yakuun* 'to be,' as in (20):

(20)	saufa/ sa-	yakuunu	ar-rajul-u	mariiḍ-a-n
	will	be(M.S.)	DEF-man-NOM	sick-ACC-INDEF
	'the man will be sick'			

Having highlighted the morphological and semantic characteristics of pure and participial adjectives, we now turn to an overview of the syntactic environment in which Arabic adjectives occur.

3. Arabic Adjective classes and their distribution

An important distinction to be examined is that between: attributive and predicative adjectives. As far as word order is concerned, both attributive and predicative adjectives follow the nouns they apply to. We have already seen that attributive adjectives agree with their modified nouns in [Number], [Gender], Case, and definiteness (see, example (5), repeated here as (21)); thus, they exhibit what will be called: *full* agreement.

Predicative adjectives, on the other hand, show agreement with the subject nouns in all of these features, except definiteness, and Case (with certain exceptions.[22]) Thus, predicative adjectives differ from attributives in that they show *partial* agreement with the nouns to which they predicate an attribute.[23]

22 That is, when they are not preceded by any overt Case assigner (e.g., *ʔinna* and *kaana*), as has been shown.

23 Another type of adjectives (i.e., The Indirect Attribute), which shows some unique agreement

(21) ar-rajul-u aṭ-ṭawiil-u mariiḍ-u-n
DEF-man-NOM DEF-tall-NOM sick-NOM-INDEF
'the tall man is sick'

As has been shown, the adjective *aṭ-ṭawiil* 'def-tall' is attributive, while *mariiḍ* 'sick' is predicative.

In terms of word order, when a noun is followed by two adjectives, the attributive adjective must precede the predicative one as the ungrammaticality of the example in (22) illustrates:

(22) *ar-rajul-u mariiḍ-u-n aṭ-ṭawiil-u
DEF-man-NOM sick-NOM-INDEF DEF-tall-NOM

Thus, with attributives forming part of the nominal phrase with their modified nouns, a normal constituent structure is reflected.

Thus far, we have noted that attributive adjectives show full agreement with their modified nouns, while predicative adjectives show partial agreement with the same nouns. However, the exact interpretation/classification of an adjective can only be determined contextually. That is, when the subject noun is indefinite, the adjective will

relationships and word order, will be introduced and discussed in chapter 6.

bear the indefinite marker as well; in this case, the adjective might be interpreted either attributively or predicatively:

(23) rajul-u-n mariiḍ-u-n
man-NOM-INDEF sick-NOM-INDEF
Reading (i): 'a man is sick'
Reading (ii): 'a sick man'

The example in (23) is ambiguous between a predicative reading as in (i) and attributive reading as in (ii); only the context should determine which reading is the correct one.

Fassi-Fehri (1999) observes that another distributional distinction between attributive and predicative readings involves the positions adjectives occupy with respect to the complement of the modified head noun. That is, attributive adjectives are placed before the complement, whereas predicative adjectives are placed after the complement. Compare the following examples from Fassi-Fehri (1999, p. 111):

(24) muħaarab-t-u al-ħukuum-at-i al-muntaḍar-at-u li- l-ʔirtišaa-i
Fighting-F.S.-NOM DEF-government-F.S.-GEN DEF-expected-F.S.-NOM of DEF-corruption-GEN
'the expected fighting of the corruption by the government'

The adjective *muntaḍar* 'expected' appears before the prepositional phrase complement *li al-ʔirtišaaʔ-i* 'of the corruption', and an attributive reading of the sentence is obtained, as

the translation shows. In the next example, however, the same adjective *muntaḍar* is placed after the complement, thus yielding a focus reading:

(25) muħaarab-at-u al-ħukuum-at-i li al-ʔirtišaaʔ-i al-muntaḍar-at-u
Fighting-F.S.-NOM DEF-government-F.S.-GEN of DEF-corruption-GEN DEF-expected-F.S.-NOM
'the fighting of the corruption by the government, which is expected'

In all previous examples, we have seen that both attributive and predicative adjectives occur postnominally in Arabic; however, they can also occur prenominally. In the latter case, however, their distribution with respect to the noun they apply to entails different readings. The next section discusses the possible pre- and postnominal positions an adjective can occur in.

3.1 Postnominal adjectives

Thus far, it has been shown that adjectives in Arabic occur generally in postnominal positions. Postnominally, adjectives observe certain hierarchical order. In other words, when a head noun is modified by two attributive adjectives, these adjectives must observe certain "hierarchical prominence restrictions on serialized ordering" (Fassi-Fehri, 1999, p. 107). Consider the following example:

(26) al-kitaab-u al-ʔaxḍar-u aṣ-ṣaɣiir-u
DEF-book-NOM DEF-green-NOM DEF-small-NOM
'the little green book'

In this example, the noun *al-kitaab* 'def-book' is modified by two adjectives: *al-ʔaxḍar* 'green(definite)' which is followed by the adjective *aṣ-ṣaɣiir* 'little(definite)'. In this order, the sentence yields an attributive reading. According to Fassi-Fehri (1999), postnominal adjectives in this example show the mirror image ordering of similar adjectives in English (e.g., *the little green book*).

If, however, we switch the order of the adjectives in example (26) (i.e., move the adjective *aṣ-ṣaɣiir* to the left of *al-ʔaxḍar*), then we will have focus reading. Compare the following example with the one in (26):

(27) al-kitaab-u aṣ-ṣaɣiir-u al-ʔaxḍar-u
DEF-book-NOM DEF-small-NOM DEF-green-NOM
'The little book which is green'

As the English translation shows, the adjective *al-ʔaxḍar* 'green(definite)' has a focused interpretation. Therefore, postnominal adjectives which observe mirror image ordering of adjectives in English, are interpreted as attributive in MSA. On the contrary, a focus reading is obtained when the adjectives are placed in the order observed in English.

In the next section, we will see that Arabic adjectives can also occur prenominally.

3.2 Prenominal adjectives

Adjectives in Arabic can be placed before the nouns they apply to (i.e., prenominally). In this case, a Construct-State-like construction, which will later be referred to as *Adjectival Construct*, is obtained. Compare the adjectival construct in (28) with the nominal Construct State[24] example in (29):

(28)	ʔakal-tu	laðiið-a	al-ʔaṭʕimat-i
	ate-I	delicious(M.S.)-ACC	DEF-food(F.Pl.)-GEN
	'I ate the delicious (of the) food'		

(29)	bayt-u	ar-rajul-i
	house-NOM	DEF-man-GEN
	'The man's house'	

Despite the fact that the adjective *laðiið* 'delicious' semantically applies to the nominal complement noun *al-ʔaṭʕimat* 'DEF-foods', it does not show any agreement in [Gender] or in [Number] with this noun (more on this construction will be discussed in chapter 6).

24 The Construct State in Arabic is generally composed of a head noun followed by a genitive noun (i.e., a noun that bears a genitive Case value).

Superlative 'elative' adjectives such as *ʔaħsan* 'best' can also occur prenominally as in example (30) below:

(30) jaaʔ-at ʔaħsan-u aṭ-ṭalib-aat-i
came-3F.S. best(M.S.)-NOM DEF-students-F.Pl.-GEN
'the best (female) student came'

As we have seen with example (28), the elative adjective *ʔaħsan* 'best' forms a CS with the noun it modifies; moreover, the adjective shows no agreement with its complement as far as [Gender] and [Number] features are concerned.

Like the head noun of a CS, we notice that both prenominal adjectives in examples (28) and (30) cannot take the definite article *al-* as the ungrammaticality of the following example shows:

(31) *ʔakal-tu **al**-laðiið-a aṭ-ṭaʕaam-i
ate-I **DEF**-delicious-ACC DEF-food-GEN
'I ate the delicious (of the) food'

Compare this example with the following one where the adjective is placed after the noun it modifies:

(32) ʔakal-tu aṭ-ṭaʕaam-a al-laðiið-a
ate-I DEF-food-ACC DEF-delicious-ACC
'I ate the delicious food'

Notice that the adjective in example (32) agrees with the noun it modifies in [Gender], [Number], Case, and definiteness (i.e., it shows full agreement), thus the adjective *laðiið* 'delicious' in this example is an attributive adjective.

In summary, adjectives in Arabic show striking similarities with nouns as far as their internal word formation and their ability to bear morphology encoding properties of [Number], [Gender], Case, and definiteness. The semantic properties of adjectives produce two general types: pure adjective and participles. The syntactic distribution of adjectives has been briefly discussed in the last section.

The following chapter presents an overview of the theoretical frameworks within which my analysis will be developed.

Chapter 2

Theoretical Frameworks

1. Introduction

The primary objective of this thesis is to provide a principled model of the syntactic properties of Case and agreement in Arabic adjectival constructions. Moreover, Case and agreement properties in other syntactic structures (e.g., noun phrases) will be dealt with insofar as they contribute to the general discussion. As a matter of fact, the morpho-syntactic similarity both nouns and adjectives exhibit calls for a unified analysis.

This section lays out the syntactic framework within which Case and agreement properties in Arabic adjectival clauses are to be analyzed. Chomsky's (1993, 1995) Minimalist Program (MP) was introduced as an alternative to the then dominant syntactic theories of the eighties and early nineties (i.e., Government and Binding (GB); Principles and Parameters (P&P)) which in retrospect were viewed to have suffered some empirical and conceptual difficulties, and to have produced theoretical inconsistencies.

Since its inception, Chomsky has clearly stated that the MP is presented as a *program* (not a theory) which had to be developed if it were to become a theory. The principles of the

MP have thus always been under scrutiny, which has led to the MP experiencing various stages of development and refinement, some of which will be discussed in this section. Basic principles of the MP (especially those relevant to the present thesis) will be presented, and their development through different versions will be traced.

2. *The Minimalist Program (MP)*

The MP requires that the notions utilized by syntactic theories be reduced to the minimum. In other words, only non-redundant compositional syntactic operations were to be adopted. This requirement has led to the abandonment of some of the assumptions proposed in GB as well as some P&P syntactic theories.[25]

This requirement is forced by the hypothesis that the language faculty provides *only* the "machinery" needed to satisfy the "legibility conditions" of language, which basically means that the expressions generated by the language faculty must be legible[26] at the level where the syntax interacts with the other external, cognitive systems of articulatory-perceptual and conceptual-intentional: the interface levels of Phonological Form (PF) and Logical Form (LF), respectively (Chomsky, 2000, p. 112).

25 For example, the MP eliminates the language-internal levels of Deep- and Surface-structures, which were widely assumed in the pre-Minimalist era.

26 The *legibility* notion simply means that no uninterpretable features (i.e., features with no semantic contribution) are allowed at the interface levels.

Various syntactic principles have been postulated in the MP; the principle of *Full Interpretation,* as well as the concept of *economy* reside at the heart of Minimalist syntax as the fundamental principles. According to Chomsky (1993), linguistic expressions are the "optimal realization" of the interaction of these principles (p. 26). Thus, the next few paragraphs will be devoted to the discussion of each of these principles.

Simply put, the principle of *Full Interpretation*[27] prevents superfluous elements (i.e., those which have no semantic content) from entering the syntactic representation.

The concept of *economy* resonates with the general requirement of the MP which reduces syntactic principles to the minimum. In other words, the syntactic computational system[28] of the language requires that the number of operations involved in the derivation of a structure must be as few as possible, based on the principle of economy. Thus, in a situation where two options/steps are available to the language's computational system, the least costly is preferred.

In the MP, *features* are "linguistic properties" of both lexical and functional elements (Chomsky, 2000, p. 100). Features play a basic role in the computational system. A syntactic element is comprised of a bundle of features. There are two basic types of features: formal and semantic. Syntactic features include [Gender], [Number], and

27 The Full Interpretation principle was first introduced in Chomsky (1986b).
28 The computational system is the grammar component which builds syntactic structures.

[Person] (better known as phi-features or φ-features). Other features (e.g., interrogative, focus, topic, quantifier features, etc) are called "semantic features;" these are specified by the grammar model.

Some of these features are interpretable (i.e., they provide legible information and instructions to the two external cognitive interface systems of LF and PF); but other features are uninterpretable (i.e., they do not contribute legible instructions at the interface).

Chomsky argues that such uninterpretable features must be valued in order for the derivation to converge[29] at LF; if not valued, the derivation will *crash* due to a violation of the Interpretability Condition: "LIs [lexical items] have no features other than those interpretable at the interface, properties of sound and meaning" (Chomsky, 2000, p. 113).

In early versions of the MP, Chomsky (1995) argues that the syntactic computational system makes use of three main derivational operations: Merge, Agree, and Move. In the following sections, each derivational operation will be discussed.

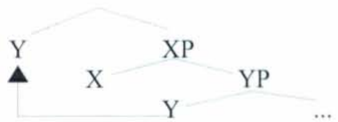
29 The derivation of a linguistic expression is said to *converge* at the interface level if the computation of that expression results in the formation of an expression which contains only legible instructions to the interface levels.

2.1 Merge

In simple terms, Merge can be defined as the computational operation which joins two syntactic elements thereby forming a larger, more complex syntactic structure. Chomsky (2000, p. 113) states that the operation Merge is "indispensable," thus reflecting its importance in the syntactic system.

Chomsky (1995) proposes two types of Merge: External and Internal. The former operation directly introduces a lexical item from the lexicon to the derivation; whereas the latter includes displacement (or movement) from one position to another during the course of the derivation; see (1) for illustration:

(1) Internal Merge



Displacement of element Y to a higher position in the structure is a form of Internal Merge. Thus, Internal Merge[30] is seen as a process of copying and deletion, whereby the moved element is a copy of the lexical item, and the original copy of that lexical item is normally deleted (i.e., it is not pronounced).

30 Later in the discussion, we shall see what causes Internal Merge to occur.

According to Chomsky (2001), both External and Internal Merge operations come *free of charge* (as far as cost), and as such, they would not cause any further complications for the syntactic computational system.[31]

Relevant to the notion of the *lexicon* is that of *the numeration*. According to Chomsky (2001), the numeration contains a set of unordered lexical items which has been selected from the lexicon, and eventually ends up on the syntactic tree structure of a phrase.

2.2 Agree

The definition and specification of the concept *agreement* have received different analyses in the pre-Minimalism literature. For example, in a specifier-head configuration, which was first introduced in Kayne (1989) and was later adopted and supported by Pollock (1989), agreement is established "if Y agrees with XP, XP and Y are or have been in a Spec head relation in the course of the derivation" (Koopman, p. 161, 2006). Thus, when the head of the phrase (Y) shows agreement with its spec by sharing features such as [Person], [Number], and [Gender], we can say that agreement has occurred, as in (2):

31 Chomsky (1995) states that External Merge is "free of charge"; however, there was no indication of the status of the Internal Merge until (2001).

(2) Spec-head relation

This configuration of agreement[32] was widely adopted in the literature (e.g., Chomsky, 1991; Koopman & Sportiche, 1991).

Also, the *agreement* concept has been investigated in a *government* configuration. Government is based on the notion of c-command, and has been proposed as a specific configurational relation out of which agreement is obtained (see, e.g., Chomsky, 1986a; Koopman & Sportiche, 1991, among others). Koopman (2006) argues that Government can be defined as in the following representation: Y [ZP XP [Z [WP]]]. In this representation, Koopman (2006) argues that "Y governs its sister ZP, the Spec of its sister, XP, and the head of the complement, Z" (p. 161); as illustrated in (3):

(3) Government relation

In the MP, two syntactic elements are believed to have entered into the grammatical

32 As will be shown, Chomsky (2000, 2001) dispenses with the requirement that agreement arises from a Spec-Head configuration in favour of the Agree operation.

relation of *agreement* when both elements exhibit the same feature(s). In this sense, one of the two elements must be conceived of as the provider of the feature(s) whereas the other element is the receiver of these feature(s). Chomsky (1995) introduces the operation Agree as one of the fundamental concepts in the MP, and as the second derivational operation in the syntactic system.

Agree can be thought of as a process which holds between syntactic objects α and β where "α has interpretable inflectional features and β has uninterpretable ones which delete under Agree" (Chomsky, 2001, p. 3). Agree requires that α and β be in a c-command relation. The valuation process of the uninterpretable features of a lexical item is implemented by Agree. The basic role of Agree is to guarantee that only legible information is transferred to the interface component in preparation for the derivation to converge.

In technical terms, Agree requires that an uninterpretable feature on a given lexical item act as a *Probe* which initiates a search for a *Goal* which has (a) matching (interpretable) feature(s), thus forming a Probe-Goal relation. Agree should value (and delete) the uninterpretable feature(s) of the Probe by matching it with an interpretable feature(s) on the Goal; thus, the *direction* of Agree should proceed from the Probe to the Goal only, according to Chomsky.

Like other types of features, Case and φ-features come in two versions: interpretable and

uninterpretable. The uninterpretable features must be valued (i.e., become interpretable in order for the derivation to converge). In more recent versions of the MP, Case valuation is obtained under Agree,[33] as will be shown next.

A relevant concept in the MP is that of Activation. According to Chomsky (2000), activation[34] simply means that if an unvalued/uninterpretable feature exists on an item, this feature renders that item active/visible for syntactic operations such as Merge (e.g., pied-piping), Agree (e.g., deletion, checking, or valuation), and Move. However, Chomsky adds that once that uninterpretable feature is valued, the host item becomes inactive, meaning that it cannot serve as a goal for further agreement relations.[35]

Chomsky (2000), then, proposes the locality condition: *Defective Intervention Constraint* (p. 123), which prevents Agree from taking place between a Probe and a Goal in the

33 Between the GB framework and the MP, Case, as a syntactic property, has received different treatments. In pre-Minimalism (i.e., GB theory), Case can be *assigned* to a nominal element in one of two ways: Spec-head configuration or under government (Chomsky, 1981). In English, for example, nominative Case is assigned to a NP in the subject position by INFL (I) either under government or through spec-head agreement. Accusative Case, on the other hand, is assigned by a governing V or P (Haegeman, 2001).
In early Minimalist work, Case-assignment was replaced by Case-*checking*, where nominals come from the lexicon with specified Cases; still however, these predetermined Cases needed to be checked by a functional head (in a spec-head configuration) during the course of the derivation (Chomsky, 1993, 1995).
Building on Pollock's (1989) Split INFL Hypothesis, Chomsky (1991, 1993) argues that AgrP can itself be divided into AgrSP and AgrOP. AgrSP provides the position in which nominative Case is assigned/checked; accusative Case, on the other hand, can be assigned/checked in the position provided by AgrOP. Notice, however, that AgrPs were later downplayed and finally abandoned by Chomsky (1995).

34 In the pre-Minimalism era, Chomsky (1981) formulates the Visibility Hypothesis, which states that in order to be interpreted at LF, a NP must have Case. Thus, Chomsky's recent assumption of activation can be seen as a reiteration/resurrection of his old proposal that Case checking/valuation is a pre-requisite for a nominal's interpretation.

35 Note, however, that Chomsky's conclusion has been challenged by data from different languages (see, e.g., Albiou, 2006, 2010; Béjar and Massam, 1999; Carstens, 2000, 2001, 2003, among others).

presence of another inactive, intervening Goal, as in the following configuration:

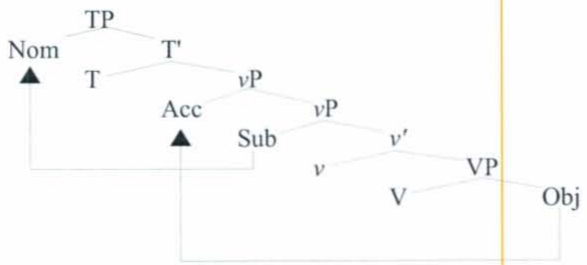
(4)

According to this constraint, the Goal β is inactive (due to a previous Agree relation) and thus intervenes (blocks Agree) between the Probe α and the active Goal γ.

2.2.1. Double shell VP

Building on the works of Larson (1988) and Hale & Keyser (1993), Chomsky (1993) incorporates into the MP the idea that the lexical verb phrase (VP) is immediately dominated by a light (functional) verb *v*. This light verb provides two specifier (inner and outer) positions. Consider the following tree structure:

(5)



On this view, the subject originates in the inner spec position of *v*P. The nominative Case on the subject is checked in the spec TP. The object originates as complement to V, and moves to the outer spec *v*P in order to have its accusative Case checked.

Like other aspects of the MP, the concept of Agree has been subject to refinements since it was first introduced in Chomsky's (1995) work. Particularly, the specifications and mechanics of Agree have changed in accordance with the theoretical and practical changes the MP has undergone.

Phase Theory (Chomsky, 2001) introduces a revised version of the MP. In this model, phases are defined as (a) "propositional" (i.e., the closest syntactic equivalent to a proposition), and (b) "reconstruction sites" which are phonetically independent (p. 12). Neither Tense Phrases (TPs) nor VPs are phases; only CPs and transitive *v**Ps constitute phases.[36] Chomsky further distinguishes between *strong* and *weak* phases: both CP and *v**P (as opposed to the weak[37] phase of *v*P) are considered strong phases, under this view. Strong phases (i.e., CP and *v**P) are targets for movement motivated by an EPP feature on the phase head. As will be shown, Chomsky's distinction between strong and weak phases will prove to be crucial at Spell-Out.

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36 Chomsky (2001) states that a light verb with a full argument structure (i.e., has an agent or experiencer) is *v**P.

37 Weak phases, according to Chomsky, are passive/unaccusative *v*Ps. Under the Phase Impenetrability Condition (see the definition in section 2.4, p. 57), weak phases do not *count* when it comes to determining where the points of Spell-Out occur.

Under the Phase Theory, the functional heads T and *v* have uninterpretable[38] φ-features which must be valued (through Agree) by a corresponding set of interpretable φ-features on nominal heads within the c-command domain[39] of T and/or *v*. Unlike functional heads, nominal heads (in this case, Goals) have uninterpretable structural Case features (i.e., [*u*Case]) which must be valued (and eliminated by Agree) by either T or *v* in order for the derivation to converge (i.e., before they are sent off to the LF interface level). Agree is a form of *assignment,* by which the value of the Goal is assigned by the Probe. In this respect, valuation of structural Case is considered to be a *by-product* of the valuation of φ-features. Thus, Case *itself* is demoted in status and gets excluded as a trigger for the Agree process.

Valuation and interpretability[40] function together (i.e., in a bi-conditional relation), which means "a feature F is uninterpretable iff F is unvalued" (Chomsky, 2001, p. 5). This way, Agree is presented as a process which helps unify the valuation/interpretation process of unvalued φ-features on functional heads as well as unvalued Case features on nominals.

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38 Chomsky (1995) argues that two types of uninterpretable features exist on T: (a) φ-set, and (b) selectional feature (EPP).

39 The exact values assigned to the Case features on these nominals depend on the Probe itself; that is, nominative Case is valued by T, whereas accusative Case is valued by *v*. Note that Chomsky (1995) argues that values of the features are binary. That is, a Tense feature, for instance, would have either [+Tense] or [-Tense] values. However, in Chomsky (2000, 2001), the focus has changed from binary values to a valued feature system, whereby a feature can take different values (i.e., whatever values available); for example, depending on the language, the [Gender] feature can have different values such as [*masculine*], [*feminine*], or [*neuter*]. Similarly, the [Tense] feature can have the values [*past*], [*present*], or [*future*].

40 Pesetsky & Torrego (2004) propose a different view of *valuation* and *interpretation* (see, section 3. in this chapter for details).

A relevant notion to valuation/interpretation is φ-(in)completeness. Only phasal heads (i.e., Probes) with a complete set of φ-features (i.e., φ-complete) are able to value and thus delete uninterpretable features on lexical items. A Probe with an incomplete set of φ-features (i.e., lacking one or more of these features) is unable to value and/or delete an uninterpretable feature on a matching Goal. This type of Probe is called *defective*.[41] Chomsky argues that certain constructions have incomplete sets of φ-features; specifically, he states that infinitival TP with a raising verb (6), as well as *v* with an Exceptional Case Marking (ECM) verb (7), are good examples of constructions with incomplete sets of φ-features:

(6) There are likely to be awarded several prizes. (Chomsky, 2001, p. 7)

(7) We expect there to be awarded several prizes. (Chomsky, 2001, p. 7)

The defective T (T_{def}) in example (6) has only one unvalued feature ([Person]) and thus can neither value nor delete the unvalued Case feature on the goal (the quantifier phrase (QP) *several prizes*). When T_{def} probes QP, the unvalued [Person] feature gets valued by the valued [Person] feature on *several prizes*. However, the unvalued Case feature on the QP remains unvalued, and the derivation crashes unless a higher Probe with a complete set of φ-features enters the derivation and starts probing for Goals.

41 Béjar (2008) casts doubts on Chomsky's idea that only φ-complete Probes are able to value [*u*Case] features on Goals by presenting cases from Erzya Mordvinian, where φ-(in)completeness of a Probe does not seem to affect valuation (see, also, Carstens, 2001, for a similar conclusion).

In (6), such a Probe is the higher T represented in the following schema:

(8) [C [T [be likely [Expl [to be awarded several prizes]]]]]

Only then will the unvalued Case feature on *several prizes* get valued (nominative).

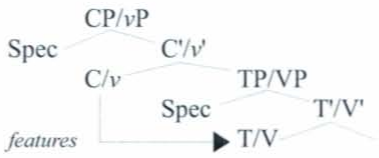
The interface between syntax and other systems forces the deletion of uninterpretable features. Thus, in addition to Merge, Agree is crucial to satisfying the conditions for the "good design" of language. Under a strong Minimalist thesis (SMT), the faculty of language (FL) is perfectly designed. Language, according to SMT, is viewed as "an optimal solution to legibility conditions" (Chomsky, 2000, p. 96). Agree then has become a prominent player in the analysis of syntactic phenomena. The next sub-section introduces a more recent, modified version of Agree.

2.2.2. Feature-Inheritance

Chomsky (2005, 2008) introduces a newer, revised version of the MP: the Feature-Inheritance (FI) model. Under the FI model of Agree, C, the phasal head of CP, transfers its features to a lower head; specifically, the valued [CASE] feature (with a nominative value), along with an unvalued set of φ-features on the phase head C, get transferred to

the *non*-phasal head[42] T of TP. In a similar fashion, the valued [CASE] feature (with an accusative value), and the unvalued φ-features on the phase head *v*, get inherited by the lexical, *non*-phasal head V of VP:

(9)



The FI model is conceptually motivated by the A/A'-distinction, and is given empirical support by the impossibility of finite TP to "move or appear in isolation without C" (Chomsky, 2008, p. 144). This model is also motivated by raising (or ECM) infinitivals, which are said to lack φ-features and tense.

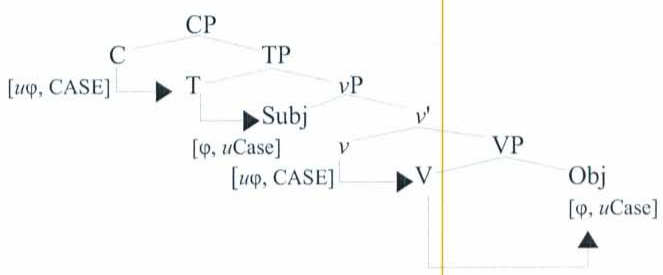
Chomsky (2005) provides some solid conceptual arguments for FI, which assume that C must transfer its features to T, if the derivation is not to crash. Before C is merged, T is only specified for tense features. When C enters the derivation, it transfers its unvalued φ-features as well as the feature [CASE] to T. Only after this has happened does T, which now has unvalued φ-features[43] and [CASE], probe the subject (in spec *v*P). Thus, under Agree, the unvalued φ-features on T, as well as the [*u*Case] feature on the subject, become

42 According to Chomsky (2007), T comes from the lexicon with a Tense feature which "receives only some residual interpretation unless selected by C" (p. 20). That is, the feature Tense on T must be supported (i.e., selected by C) in order to receive interpretation.

43 Note that in the MP's versions of (2000) and (2001), the head T had uninterpretable φ-features; however, since (2005), these features have been argued to be one property of the phase head C.

valued and deleted. This is illustrated in the structure in (10):

(10)



In the same fashion, the phasal head *v* transfers its features (unvalued φ-features, and valued [CASE]) to the head V, which then probes the goal in object position. Under Agree, the unvalued φ-features on the Probe and the [*u*Case] feature on the object receive valuation.

2.3 Move[44]

Although Move is a key operation in the derivation of syntactic structures, Chomsky (1995) proposes that Move is an "imperfection," and thus must be avoided unless "forced." A modified and more economical account for covert movement is provided in the Attract principle. According to this principle, movement is motivated by the requirement that an uninterpretable feature be *checked.* Such a feature attracts an

44 In a Spec-Head approach, Move is considered a precondition for agreement. In other words, movement feeds agreement. Thus, in sequence, Move should occur before agreement takes place.

interpretable feature on some other category, and causes it to raise. Thus, under this principle, features (especially interpretable features) are the ones that should move.

However, with successive refinements of the MP, Chomsky (2000, 2001) abandons the idea that features should move for feature-checking; instead, he proposes that the operation Move is preempted by Merge, Agree, or a combination of both operations, thus restricting the basic syntactic derivational operations involved in the computational system of language to Merge and Agree only. The complexity of pied-piping, for example, has led to the demotion of Move. The demotion of Move, however, does not mean that the computational system totally dispenses with Move; rather, Move is considered "a last resort" option to which the language system appeals when there is no other operation available.

For illustration, Chomsky ascribes the ungrammaticality of example[45] (11) to the fact that movement of the QP *some planes* to spec TP is unnecessary, since it could be preempted by the existential *there*, which already exists in the numeration (cf. with (12)):

(11) *There seem [*some planes* to have landed *some planes*]

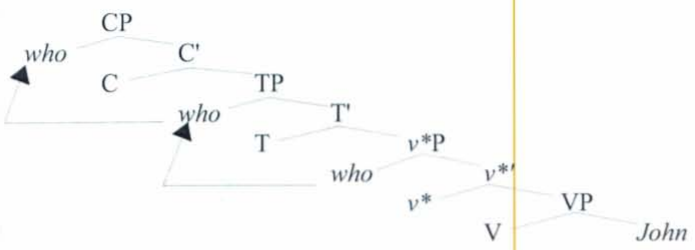
(12) There seem [*there* to have landed some planes

45 Examples are provided by Phil Branigan.

Move is driven by the phase head; and when Move occurs, it proceeds in a "category by category" fashion until the phase head point is reached whereupon Move stops. However, in the FI model, an exception is made: When C selects T, T inherits the uninterpretable features (i.e., φ-features) of C. This indicates that a DP which reaches the TP level would have had its unvalued features valued, and thus would not be able to move further. The uninterpretable features on a phase head play a partial role in causing internal merge. As Chomsky (2005) puts it, phase heads have "an edge feature, sometimes called an 'EPP-feature'"; this feature "permits raising to the phase edge without feature matching" (pp. 18-19). Consider the following example from Chomsky (2008, p. 149), and its syntactic representation in (14):

(13) Who saw John?

(14)



The Probe *v**-V probes and enters into Agree with the goal *John,* thus valuing the uninterpretable φ-features on *v**-V. According to Chomsky, C-T probes *who* (in spec *v**P); the Agree-feature (i.e., φ-features) on C-T raises *who* to spec TP. Likewise, the EF

on C-T raises *who* further to spec CP. However, Chomsky (2008, p. 150) comments that this way of forming (13) is "redundant;" in addition, the EF is unable to extract (e.g., a PP complement) inside of spec TP. Thus, he concludes that spec TP must then be "impenetrable" or "invisible" to EF; this conclusion conforms with the activity condition, knowing that the uninterpretable feature (i.e., [Case]) on *who* would have received valuation at this point.

An alternative way of deriving (13) would allow for the EF on C to extract the *wh*-phrase *who* from its base position (i.e., in spec *v**P). This amounts to saying that the Agree-feature (or φ-features) on a phasal head may or may not raise an XP goal to spec T (or *v**, by extension), for it will be invisible for EF, thus no extraction from nor further movement of XP is possible.

If, on the other hand, the EF raises XP directly from its base position, then XP would be accessible to higher probes (i.e., could be raised higher and/or extracted). This will not be possible unless both features (i.e., Agree and EF) apply simultaneously, according to Chomsky.

2.4 Spell-Out

Spell-Out is the operation responsible for (a) stripping a syntactic object from its

uninterpretable features (at LF), and (b) delivering that syntactic object to the PF component. Cyclicity requires that the uninterpretable features of a head be dealt with immediately upon introducing that head to the structure; thus, Spell-Out must happen as soon as uninterpretable features are assigned values, or the derivation will crash (Chomsky, 2001).

In Chomsky (1993, 1995), Spell-Out is said to occur at a single point where the derivation is sent off to the LF interface. However, in Chomsky's (2001) phase-theoretic approach of the MP, Spell-Out is argued to operate in a phase-by-phase fashion, meaning that Spell-Out can occur more than once in a single derivation.

In particular, Chomsky suggests that once an uninterpretable feature has been assigned a value, it gets deleted; however, this feature remains within the cyclic computation until a *strong* phase level is formed. Only then will the whole phase be transferred to PF.[46]

In this respect, Spell-Out interplays with the *Phase Impenetrability Condition* (PIC). Chomsky (2001) defines[47] PIC as (15):

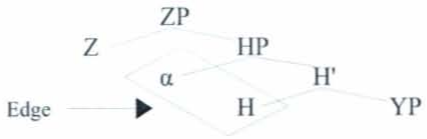
(15) The domain of H is not accessible to operations outside HP; only H and its *edge* are accessible to such operations (p. 13).

46 Uriagereka (1999) proposes a theory of a syntactic derivation whereby multiple instances of Spell-Out are assumed to occur in a single derivation.

47 Different definitions of PIC have been proposed in the literature (see, e.g., Baker, 2008; Richards, 2007b, and the effects these definitions reflect on the analysis).

For illustration, consider the following representation:

(16)



Assuming that HP is a *strong* phase, under the PIC, only the head H and its edge α of HP are accessible to operations outside the phase (i.e., inside the next, higher strong phase). For the purposes of Spell-Out, the head H and its edge α belong to the phase[48] ZP (i.e., must be spelled out at the ZP level). The complement YP, on the other hand, is spelled out at the HP phase level. Thus, Chomsky (2001) expresses this type of interaction between Spell-Out and the PIC in the following principle (p. 13):

(17) Ph1 [strong phase] is interpreted/evaluated at the next relevant phase Ph2 [next, higher strong phase].

Furthermore, from this principle follows the notion that valuation/interpretation takes place at the next highest phase. Nevertheless, this principle was rejected in favour of a simpler version of Spell-Out which entails that at the end of a phase, everything in the

48 Chomsky argues that the head H and its edge α must remain in-situ in order to get spelled out. This indicates that the existence of an EPP (or EF) on a head signals that Spell-Out must be delayed until the next phase.

complement must be spelled out.

The next subsection introduces what could be regarded as another version of Chomsky's Agree theory, formulated by Pesetsky and Torrego.

3. *Pesetsky & Torrego (2001-2007)*

A second framework relevant for this thesis is a version of Agree, first introduced in Pesetsky and Torrego's (P&T) work in 2001 and later revised in subsequent works by the same researchers.

Building on Chomsky's theory of Agree, P&T (2007) develop their own version of Agree. In their approach, P&T adopt a traditional concept which views agreement as a reflection of a *feature-sharing* system.[49] Like Chomsky, P&T argue that certain features come from the lexicon unvalued, but receive valuation by a valued instance of the same feature (through the process of Agree).

P&T (2007) draw on ideas of agreement by Frampton and Gutmann (2000) and Frampton, Gutmann, Legate, and Yang (2000) in proposing that when Agree occurs

49 Cf. Chomsky's (1995-2007) view of Agree as an *assignment/valuation* process.

between a feature on a Probe and another feature on a Goal, the outcome of Agree is a single feature shared by two locations. To articulate this, P&T present their *feature sharing* version of Agree (p. 268):

(18)

i. An unvalued feature F (a *probe*) on a head H at syntactic location α (F_α) scans its c-command domain for another instance of F (a *goal*) at location β (F_β) with which to agree.
ii. Replace F_α with F_β, so that the same feature is present in both locations.

Under this view, *agreement* refers to the properties of D (i.e., φ-features) which are present on T. Case, on the other hand, refers to the properties of T which are present on D. More specifically, φ-features are uninterpretable when carried by T; however, these features become interpretable somewhere else (i.e., on D). Similarly, a Case feature is uninterpretable when carried by D, but becomes interpretable somewhere else (i.e., on T).

Furthermore, P&T argue that T on V is valued in the lexicon; however, an unvalued *occurrence* of T also exists in the form of a structural Case on D. In this approach, nominative Case on a subject, for example, reflects the fact that the subject has an uninterpretable Tense (*u*T) feature (i.e., feature that has no semantic interpretation). In order for this feature to have semantic interpretation, it has to be part of T (i.e., through Agree). The Case feature is inherently interpretable, but, since it appears on a DP, it

becomes uninterpretable. Thus, both agreement and Case features appear on the wrong places prior to Agree, and it is Agree which helps reorder and make sense of these uninterpretable features.

P&T (2007) propose that the valuation and interpretability of features are two independent concepts, and thus diverge from Chomsky's view of these notions.[50] In their characterization of interpretability (versus uninterpretability) a feature is interpretable if it makes a semantic contribution, and uninterpretable otherwise. φ-features on a DP are interpretable, whereas, the same features on a V are uninterpretable. Likewise, Case features on DPs have no semantic contribution, thus they are uninterpretable (see also, P&T, 2001). However, they maintain the idea that Case features can make a semantic contribution elsewhere in the structure.

Another matter on which P&T diverge from Chomsky is in their proposal that lexical items come from the lexicon with two, binary features:[51]

(19) uninterpretable, valued (P&T) interpretable, valued (Chomsky)

uninterpretable, unvalued (Chomsky) interpretable, unvalued (P&T)

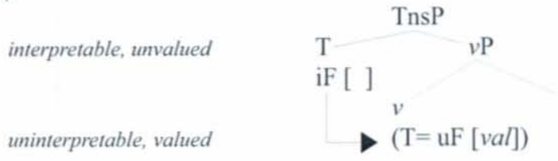
P&T provide an example of their *interpretable, unvalued* type of feature: T on TnsP is the

50 Chomsky takes an extreme way of looking at features by stating that features come from the lexicon as either interpretable/valued or uninterpretable/unvalued, and, in his system, only the unvalued features are identified as Probes by the syntax.

51 Despite these obvious differences, both versions of Agree consider unvalued features as Probes.

locus of semantic tense interpretation, thus it is interpretable, but unvalued and it should act as a Probe.[52] A finite verb (i.e., *v*), on the other hand, has a tense feature which is not interpretable, but is valued, and as such functions as a Goal:[53]

(20)



For P&T, in a finite clause, valuation of a subject's nominative Case (which has both uninterpretable and unvalued T on a DP (i.e., *u*T [ ]) in their system), proceeds as follows: The interpretable, unvalued (i.e., iT [ ]) feature on Tns starts to probe for Goal(s). The subject DP, which has an uninterpretable, unvalued T feature (i.e., *u*T [ ]), is a potential Goal.[54] According to P&T, Agree occurs between *i*T [ ] on Tns and *u*T [ ] on the subject, and a *link* is established between these two elements.

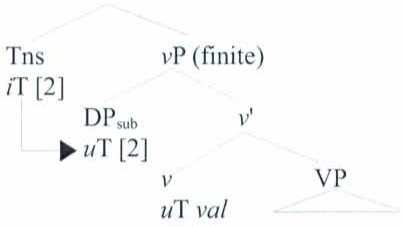
Now, these elements become instances of the same feature. However, no valuation results from this type of Agree (i.e., the DP element does not have a value to offer); consider the following structure from P&T (2007, p. 278): (Note, the number inside square brackets indicates the establishment of the link)

52 P&T (2004) use Tns to refer to the Tense category, which itself has a T feature.

53 Notice that in P&T's system, an uninterpretable instance of a feature is the same as the feature itself in Chomsky's work.

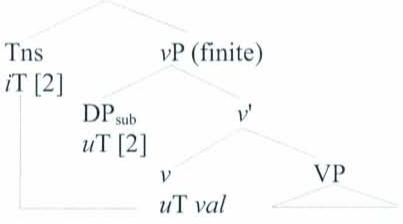
54 Note that in addition to nominals, P&T argue that CPs also have unvalued T.

(21)



Since no valuation results from (21), *i*T [ ] on Tns probes again, and this time, finds a potential Goal (*v*), and an Agree relation occurs between this Probe and the uninterpretable, but valued feature on *v*, as in (22) (p. 278):

(22)



As a result of Agree with the feature on *v*, *i*T [ ] on Tns values its unvalued feature. Also, since the *u*T [ ] on DP has already been in an Agree relation with the feature on Tns (*i*T [ ]) (represented by [2]), the structural Case on DP gets valued (nominative) in the process.[55]

55 P&T (2007) have also argued for a type of agreement relationship which does not result in valuation.

Contra Chomsky, P&T state that valuation (or *licensing*) of the subject's nominative Case does not involve φ-features;[56] instead, it is the unvalued T-feature of Tns that is relevant. In fact, P&T claim that φ-features are irrelevant to Case and Tense.

Having introduced two approaches to Agree, the next section discusses some of the challenges Arabic adjectival sentences raise for these two approaches. As we cannot reconcile the facts of Case and agreement in the data containing Arabic adjectives with current versions of the theory of Agree, some refinements to the latter are in order.

4. Agree models and Arabic data: Challenges

This section lays out the challenges that Arabic adjectival phrases (APs) raise for the current versions of Chomsky's, as well as P&T's, theories of Agree. I begin by providing an overview of how these theories have attempted to deal with APs in general. As will be shown, insufficient discussion of APs in general (let alone in Arabic) has been provided in either theory of Agree; I therefore attempt to extend the basic premises of these theories to the data from Arabic APs. It will be shown that these theories cannot satisfactorily address some of the basic, empirical facts of Arabic APs.

56 A similar conclusion was proposed in Alboiu's (2006, 2010) investigation of Spanish and Romanian.

4.1 Feature-Inheritance

Arabic APs raise some questions about the validity of Chomsky's (2005, 2008) FI model of Agree. Beginning with Case valuation, and considering the close correlation between the C-T Probe and the valuation of the nominative Case, Chomsky's FI model can be readily applied[57] to Arabic Zero Copula constructions, as in (23):

(23)	ar-rajul-u	mariiḍ-u-n
	DEF-man-NOM	sick(M.S.)-NOM-INDEF
	'The man is sick'	

The nominative Case values on the subject noun and the predicative adjective can be ascribed to a C-T Probe, which is presumed to head this construction. However, this correlation becomes questionable once overt Case assigners (e.g., *ʔinna*, *kaana*, etc.) are introduced to (23):

57 However, with some modifications. For example, the conventional positioning of the adjective in the structure (i.e., the adjective originates higher than the noun) must be reconsidered to account for the facts Arabic APs exhibits, and to avoid possible violations of the *Defective Intervention Constraint*. In addition, the agreement in φ-feature values between the adjective and the subject noun must also be addressed. The ungrammaticality of the following example is due to mismatch in the φ-feature values:

(i)	*ar-rajul-u	mariiḍ-at-u-n
	DEF-man-NOM	sick-**F.S.**-NOM-INDEF

(Note that these facts and more will be considered in detail in chapter 4)

(24) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick(M.S.)-ACC-INDEF
'The man was sick'

(25) ʔinna ar-rajul-a mariiḍ-u-n
that DEF-man-ACC sick(M.S.)-NOM-INDEF
'(it is confirmed) that the man is sick'

In both (24) and (25), there is a mismatch of the Case values on the nominal and the adjectival elements: nominative on the subject noun, but accusative on the adjective (24). In (25), the subject noun bears accusative Case, whereas the adjective bears nominative Case.

These asymmetries in Case values pose challenges to FI in its current form. First, if the nominative Case value on the subject noun is a reflex of an Agree relation with the complex Probe C-T as in (23), then there must be another type of Probe responsible for the accusative Case on the subject noun in (25). By the same token, if the nominative Case values on the adjectives in (23) and (25) reflect that Agree has taken place between these adjectives and C-T Probes, then the accusative Case value on the adjective in (24) must have been valued by a different Probe (i.e., not C-T).

The Case facts call for a reconsideration of the strict correlation between nominative Case values and the C-T Probe and require that a weaker version of such a correlation be

proposed to include other types of correlations which could possibly involve nominative Case values and *non*-C-T Probes. Thus, the presumption of a single C-T Probe in (23) is challenged by the Case facts in examples (24) and (25).

A further issue concerns (dis)agreement in *definiteness*: Arabic predicative adjectives usually disagree with the nouns they apply to, whereas, attributive adjectives show agreement in definiteness with their modified nouns as in (26):

(26)	ar-rajul-u	al-mariiḍ-u	ṭawiil-u-n
	DEF-man-NOM	DEF-sick(M.S.)-NOM	tall(M.S.)-NOM-INDEF
	'The tall man is sick'		

These asymmetries in definiteness agreement are not addressed in Chomsky's FI model,[58] and it would be interesting to know how FI would account for such asymmetries.

4.1.1. *Defectiveness* of adjectives as potential goals

Yet another issue is raised by the data under investigation in this thesis: When agreement occurs between a noun and an adjective, agreement is thought to be incomplete or *defective* (to use Chomsky's terminology) in the case that the feature **[Person]** on the noun is not reflected on the adjective; consider for example:

58 However, to be precise, Chomsky (2007) suggests that it is possible for (nominal) definite DPs to be phasal, whereas indefinite DPs cannot be phasal.

(27) ʔana mariiḍ-u-n
I sick(M.S.)-NOM-INDEF
'I am sick'

(28) hwa mariiḍ-u-n
he sick(M.S.)-NOM-INDEF
'he is sick'

The adjective *mariiḍ* 'sick' in (27) and (28) does not show agreement with the subject pronouns' first or third [Person] features, respectively. Therefore, we would assume that any type of Agree between a Probe and an adjective, might not result in valuation (and thus deletion) of the unvalued φ-features on that Probe. To put it differently, a Probe with a complete set of unvalued φ-features would search for a Goal which presumably bears a matching, complete set of φ-features in order for Agree to succeed. If that Goal is lacking one or more of these features (i.e., is defective), Agree would be incomplete, which would cause the derivation to crash. This adds to the number of issues the current version of the FI model will have to address.

According to Chomsky (2000, 2001), a φ-complete Probe is able to value and delete the [*u*Case] feature on a nominal. This amounts to saying that the Goal for such a Probe must also be φ-complete in order for Agree to succeed, as the relation in (29) shows:

(29)	**Probe**	**Goal**	**Result**
	[*u*φ]	[φ-complete]	[~~*u*φ~~] (valuation)
	[CASE]	[*u*Case]	[~~*u*Case~~] (valuation)

But, if the Goal does not have a complete set of φ-features, the Probe will not be able to have its unvalued φ-features valued. One would then expect that the Goal will not have its unvalued Case feature valued as a result of this incomplete relation of Agree, as in (30):

(30)	**Probe**	**Goal**	**Result**
	[*u*φ]	[φ-***in***complete]	[*u*φ] (no valuation)
	[CASE]	[*u*Case]	[*u*Case] (no valuation)

As will become evident, Arabic adjectives raise a further issue for the FI model of Agree: It has been argued that adjectives lack φ-features of their own, indicating that adjectives come from the lexicon with no φ-features (see, e.g., Al-Shamrani, 1994; Baker, 2008). The FI model does not address the effect of adjectives lacking the [Person] feature on the Agree relation, nor does it address the argument (in Al-Shamrani, 1994, and Baker, 2008) that adjectives come from the lexicon with no φ-features. Indeed, as will be shown, with the exception of Baker's (2008) theory of agreement,[59] there is no real attempt (by other versions of Agree) to address these issues.

59 Baker's theory will be discussed in section 6.1 of chapter 3.

4.2 Pesetsky & Torrego (P&T)

Influenced by Chomsky's (2000, 2001) Probe-Goal theory, P&T (2004) propose their version of a Probe-Goal-based approach. In this approach, Case is considered an uninterpretable instance of Tense (*u*T) on D. P&T further argue that uninterpretable φ-features exist[60] on T; there, these features act as a Probe for a Goal which carries interpretable φ-features. On this view, P&T (2004) propose that in verbal predication structures, two *occurrences* of T exist: T_S head,[61] which heads a subject; and T_O head, which is located between the functional head v and the lexical V (i.e., above VP and below v), as in (31):

(31) Subj T_S [vp v T_O [VP V Obj]] (p. 503)

The nominative Case value on a subject DP is attributed to an Agree relation between the T_S head and that subject (i.e., the uninterpretable φ-features on T_S seek a Goal that has φ-features); whereas, the accusative Case on an object is attributed to the T_O head.

Building on the conventional distinction proposed between v and V, P&T (2004) propose the following structure for adjectival clauses, with a small[62] (ap) heading AP:

60 Cf. P&T's (2007) argument that φ-features are *irrelevant* for Case valuation.
61 P&T use subscripts $_S$ and $_O$ for illustration, but with no theoretical conjecture.
62 According to P&T, little 'a' resembles little 'v' in that it assigns an agent theta-role; however, they do not elaborate on the difference between little 'a' and A.

(32) Subj T_S [ap a [AP A Obj]] (p. 505).

According to P&T, there is no T_O in this structure. This seems problematic because one would expect that the Case values on the subject, the adjective, and the object will be assigned nominative by the head T_S. Also, the role the head 'a' potentially plays (as far as Case valuation) is not clear.

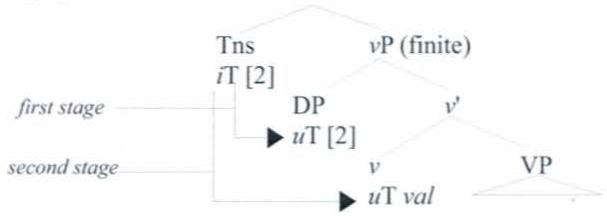
Furthermore, a Zero Copula construction introduced by a complementizer (as in (33)) poses a problem for P&T's (2004) version of Agree. While the head T_S is argued to be responsible for the nominative Case value on a subject, it is not clear where the accusative Case value on the subject *r-rajul* def-man' comes from:

(33) ʔinna ar-rajul-a mariiḍ-u-n
Comp DEF-man-ACC sick(M.S.)-NOM-INDEF
'(It is confirmed) that the man is sick'

P&T's (2007) version of Agree fares no better in accounting for Case and agreement facts in Arabic APs. As discussed (section 3.), P&T (following Chomsky, 1995) assume that the subject originates in spec *v*P. However, contra Chomsky, P&T propose that in a finite clause, the Case value on the subject is nominative due to an Agree relation between the *i*T, unvalued (*i*T [ ]) feature on the head T of TnsP and the subject's *u*T, unvalued (Case)

(*u*T [ ]) feature (see, *first stage* in (34)):

(34)

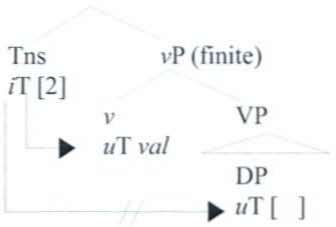


However, according to P&T, this Agree relation is incomplete in the sense that it does not result in an immediate valuation of the Case feature on the subject, nor does it result in the valuation of the unvalued feature on Tns; therefore, a further Goal, one which has an uninterpretable, but valued (*u*T *val*) feature (finite *v*) is probed (*second stage* in (34)). Only at this stage in Agree will the *u*T [ ] feature on the subject be valued.

One unresolved issue with this proposal concerns the nominative Case value on the subject. P&T argue that a DP comes from the lexicon with a Case feature (*u*T [ ]), and that φ-features on this DP are *not* involved in Case valuation. In this respect, a DP is stripped of any role in the valuation process. For instance, based on (34), the subject DP *must* occupy a specific position in the structure (i.e., between a Tns head and a finite *v*), otherwise it would not get its (*u*T[ ]) feature valued as a side-effect of the relationship between Tns and *v*. Moreover, judging from this structure, we would not expect a DP to appear lower than *v*, as there is no reason for the *i*T [ ] feature on Tns to probe lower than

v in searching for a Goal that has a valued T, as can be seen in (35):

(35)



Based on the position it occupies, the DP in (35) will not receive any Case valuation as the unvalued T feature on Tns would have received valuation through agreement with valued T feature on the finite *v*.[63]

This leads us to another issue with P&T's argument: The application of their (2007) version of Agree has a further limitation when it comes to the valuation of the accusative Case on an object DP. As a matter of fact, P&T (2007) do not offer a clear explanation of how the accusative Case on an object DP is valued. Instead, they speculate (in a footnote) that an alternative analysis, developed by Marantz (1991), might provide the answer.

According to Marantz (1991), Case values are determined by the syntactic position which

63 Furthermore, for the sake of argument, suppose that P&T's theory is indeed compatible with Chomsky's (2000-2001) works, assuming P&T's structure in (34) then would be problematic on other grounds: Following Chomsky's argument that a finite *v* is responsible for the accusative Case on a nominal, we would expect to see an accusative Case on the DP in (34) (instead of nominative), as a result of this Agree relation. Nevertheless, we should keep in mind that P&T are not assuming that the finite *v* is the source for Case value; instead, it is the T on Tns.

a nominal occupies. Specifically, in languages like Latin and Icelandic, nominative Case is assigned in the usual way (i.e., under a structural relation with T). However, accusative Case in Marantz's system is considered a *dependent Case*; that is, depending on a relation holding between two nominals; if the higher one is assigned nominative Case, the Case value on the lower one must be accusative.

Empirical data from Arabic raises some challenges not only for P&T's (2007) account of Agree, but also for Marantz's (1991) account. In particular, subject nouns in Zero Copula/verbless constructions show different kinds of agreement with their predicative adjectives (i.e., in Case and φ-features), which cannot be accounted for in P&T's system. Consider, for example, the structure in (23) (repeated here as (36)):

(36)	ar-rajul-u	mariiḍ-u-n
	DEF-man-NOM	sick(M.S.)-NOM-INDEF
	'the man is sick'	

According to Marantz's and P&T's proposals, we would expect the adjective *mariid* 'sick(M.S.)' to bear an accusative Case value (contrary to fact).

Nevertheless, to explain *hypothetically* how both elements could have received nominative Case values, let us examine P&T's structure in (34), and assume that the construction in (36) is headed by the head Tns. The Agree relation between Tns and the

two DP elements will not result in valuation of the *u*T [ ] (Case) features on the both the noun *ar-rajul* 'DEF-man' and the adjective *mariiḍ* 'sick(M.S.)' in (36) (see, *first stage* of Agree in (34)), since both goals lack valuation.

Up to this point, we should expect the derivation to *crash* unless we assume that some functional head, which must be located lower than both the noun and the adjective, exists in the structure, as in (37). In order to participate in the Agree process, we would speculate that this *functional* head has an uninterpretable (but valued) T feature: *u*T *val*:

(37) [**Tns** iT [ ] [N ar-rajul-u [A mariiḍ-u-n [**functional** uT val]]]]]

Given the nominative Case values on the subject DP (as well as AP), the exact nature of the functional head (which is located lower in the structure) must be determined (i.e., it must be shown whether this functional head is a verb, or something else).

While the proposal in (37) might (partially) explain the nominative Case values on both the noun and the adjective in (36), it does not explain other facts found in Arabic APs (e.g., agreement in φ-feature values), nor does it explain the disagreement in definiteness between the noun and its predicative adjective.

Since the inception of Case Theory, no satisfactory explanation for the existence of Case

on nominals has been proposed. What P&T have proposed constitutes a positive advancement towards solving this long-standing mystery, by conceiving of Case as an uninterpretable *tense* feature which exists on the wrong syntactic item (i.e., on a DP); and in order for a DP to receive a Case value, a tense head must probe that DP (i.e., mysteriously, a head (tense) searches for its own feature).

P&T's characterization of Case raises some questions about the recently developed understanding of the FL system: The displacement of tense seems to reflect a *deficiency* (of some type) in the design of the FL; that is, in the lexicon, the FL misplaces features by putting a feature which normally belongs to a syntactic element on a different element, thus entailing that LF, contrary to Chomsky's (2000, 2001) conjecture, is not after all an "optimal solution" to the imperfections created by the faculty itself, implying that LF does not seem to be well-designed.

Considering that P&T (2007) have eliminated φ-features as an essential element in the process of agreement, this amounts to saying that DPs have no role to play whatsoever in the agreement process, except in mistakenly/mysteriously carrying an *u*T [ ] feature.

Agreement facts in Arabic APs (whether predicative or attributive), in particular, seem to pose a further challenge to P&T's (2007) argument that Case valuation does not involve φ-features.[64] As has been shown, subject nouns and their adjectives show agreement in φ-

64 Notice, however, that P&T (2006) admit the importance of the role φ-features play in the valuation of

feature values (in addition to Case, and sometimes definiteness); thus, suggesting that φ-features play no role in the Agree process does not provide explanation for this type of agreement (i.e., in φ-features). On a similar vein, it does not explain cases where the Case morphology on an adjective seems to occur as a result of agreement (or concord) with a *single* nominative DP (i.e., subject noun *ar-rajul* 'def-man'):

(38) ʔinna ar-rajul-a aṭ-ṭawiil-a mariiḍ-u-n
Comp DEF-man-ACC DEF-tall(M.S.)-ACC sick(M.S.)-NOM-INDEF
'(It is confirmed) that the tall man is sick'

In fact, a closer look at (38) raises a further challenge to P&T's system: It is not clear how P&T's system would explain the (mis)match in Case morphology between the subject noun and the attributive adjective *aṭ-ṭawiil* 'DEF-tall(M.S.)', on the one hand, and the predicative adjective *mariiḍ* 'sick(M.S.)', on the other.

A last point concerns P&T's argument that the two features (*interpretable* and *valued*) are binary (i.e., *uninterpretable* and *unvalued*). These two features generate four types of values/instances of features. This assumption is discouraged by the general premises of the MP. That is, doubling the number of values for a feature would affect the capacity of the lexicon as it would add more information to the already burdened organ. Additionally, more complexity is likely to be added to the operations performed by the

verbs; in other words, P&T argue that one requirement of a V is that its complement must be headed by φ-features. Thus, probably in their system φ-features are only relevant for valuation of the unvalued features on verbs; but, they are not relevant when it comes to valuation of Case.

syntactic computational system as a result of the high number of values. Therefore, P&T's argument seems to violate the economy condition, and casts doubts on the compatibility of this categorization with the SMT.

With this much of discussion, we conclude that none of P&T's versions of Agree (i.e., 2004 and 2007) addresses the (a)symmetries evident in Arabic Case morphology, nor the fact that the exact values of the adjectives' φ-features are determined by the nouns to which they relate. Thus, the issues discussed raise doubts on the compatibility of P&T's theory with basic concepts of the MP. In addition, P&T's theory of Agree cannot be used to address some of the basic facts about agreement in Arabic APs.

Summary

In this section, it has been shown that Case and agreement facts in Arabic APs present challenges to the current formulation of both Chomsky's FI and P&T's versions of Agree. Nevertheless, despite all the problems these theories face, it will be shown that, with some modifications, a synthetic approach to Agree (which combines concepts from both theories) can provide explanations for the unsolved problems discussed in this section. I will also show that this synthetic approach can add some insights into the various aspects of agreement in Arabic APs (i.e., φ-, Case, and definiteness features).

The next chapter reviews different syntactic proposals based on different theoretical frameworks. The first part of the section/chapter is concerned with some cross-linguistic analyses of the general derivation of APs. In this part, APs will be investigated in relation to Small Clause constructions. The second part of the chapter reviews some of the analyses proposed for APs, including recent Agree-based proposals of APs and constructions containing adjectives such as Small Clauses.

Chapter 3

Various analyses of AP in different syntactic structures

1. Introduction

The questions this thesis has raised (see, section 1.1, chapter 1) could be considered as the foundation around which a proper theory of Arabic APs should be formulated. Equally, these questions could constitute the set of criteria any theory of Arabic APs must meet; particularly, for word order, agreement, and Case.

Thus, a proper theory of APs must address: (i) the structural positioning (i.e., word order) of the adjective in relation to the noun it applies to; (ii) in languages where adjectives show overt agreement (e.g., φ-features and definiteness in Arabic) with nouns, the issue of such a type of agreement; (iii) the way in which Case assignment, checking, or valuation occurs in predicative and attributive APs.

Assuming these criteria, this section reviews some of influential, cross-linguistic analyses proposed for APs in the syntactic literature. The section begins by reviewing what would be considered to be pre-Agree analyses, and goes on to review more recent Agree-based analyses of APs.

2. *Non-Agree-Based analyses*

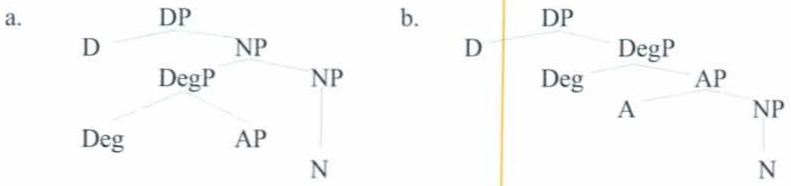
This section examines some generative analyses proposed for APs.

2.1 Abney (1987)

Abney's theory stems from the notion that noun phrases can be analyzed on a par with IP structures. Under this approach, the head D of the functional category DP (which carries the (in)definiteness features) takes a NP as its complement.

Abney's influential analysis of adjectives aims at capturing the variety of adjective specifiers in English, such as *so big, too big, big enough, etc.* Abney theorizes that Adjectival Phrases (APs) can be headed by the inflectional category DegP (Degree Phrase). In fact, Abney argues that an AP should always be headed by Deg (whether Deg is lexically filled or not). Thus, under the X-bar theoretic approach, the standard theory of *attributive* adjectives can be represented as either (a) or (b) in (1):

(1)



In (a), the attributive adjective adjoins to the NP it modifies (i.e., it originates inside the NP), whereas in (b), the adjective takes the noun it modifies as a complement, meaning that the NP originates inside the maximal projection of the AP. In either representation, the attributive adjective precedes the noun. Abney notes that participle adjectives, however, pose some problems for "the Degree Hypothesis", for participle adjectives as in *tested for drugs* resist all degree words as in **too tested/ *so tested for drugs*.

For languages where attributive adjectives show φ-, Case, and definiteness agreement with the nouns they modify (e.g., Arabic), Abney's analysis does not explain how any of these agreement relations might occur, nor does it account for the N-A word order in languages such as Arabic.[65]

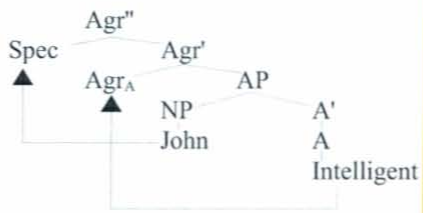
2.2 Chomsky (1993)

Building on Pollock's (1989) Split INFL hypothesis, Chomsky (1993) proposes the

65 Moreover, researchers such as Baker (2008, p. 196) point out some problems with Abney's structure. Specifically, Baker states that it is not possible for attributive adjectives to take complements, nor is it possible for a degree element (e.g., *too*, *so*, *very*) to precede the attributive adjective (see, also Fassi-Fehri, 1993, for similar criticism).

following structure for the predicative adjective in *John is intelligent* (p. 8):

(2)



In (2), the subject of predication is generated inside the maximal projection of the adjective.[66] According to Chomsky, the NP raises to the specifier position of Agr, where it enters into a spec-head relation with the head Agr$_A$, which bears φ-features "associated with an adjective" (p. 8). The adjective *intelligent* raises to Agr$_A$; thus, resulting in agreement between the NP and the adjective.

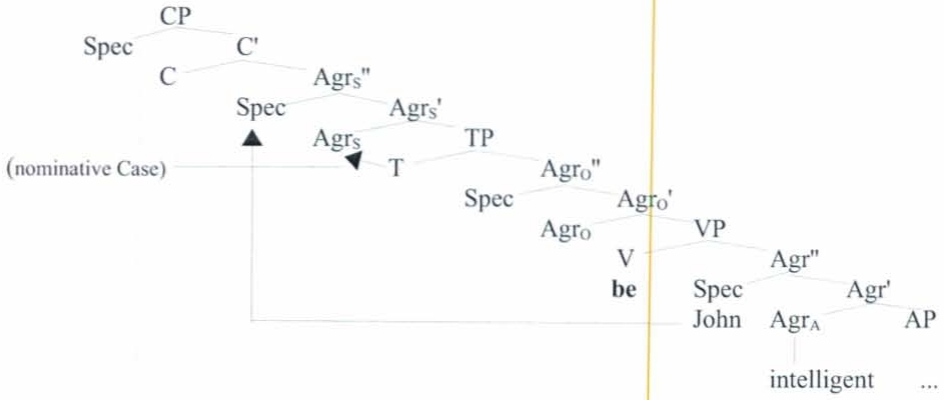
In terms of word order, the predicative adjective originates in a position following (and stays as such) the noun it applies to. Up to this point in the derivation, agreement between the subject NP and the adjective (in φ-features) can be accounted for; however, it is not clear how Case on the subject NP and the adjective will be assigned/checked.

As a matter of fact, Chomsky states that the subject NP *John* will have to raise higher in the structure in order to receive Case. Based on the assumption that Case is determined

66 The positioning of the subject NP inside the maximal projection of AP is based on the work of Stowell (1981), which will be discussed in the Small Clause section.

"by the element that adjoins to Agr (T or V)" (p. 8), Chomsky proposes that the NP *John* raises (overtly) to spec Agr_S, to which T is adjoined, such that the Case on this NP will be nominative by virtue of T:

(3)



In (3), the verb *be* selects *John intelligent* as a complement. According to Chomsky, upon raising to spec Agr_S, the NP receives nominative Case, and establishes agreement with the verb, thus giving the sentence *John is intelligent.*[67]

Chomsky's analysis raises an issue as far as Case assignment/checking on the adjective *intelligent* is concerned. It is not clear how the adjective in Agr_A receives Case. Given (3), the closest (potential) Case provider is the verb *be,* considering that head-to-head relation is a core configuration for inflectional morphology in Chomsky's (1993) analysis.

67 In Chomsky's analysis, V raises to Agr_O, while T raises to Agr_S.

Thus, we might expect the Case on the adjective to be accusative assigned by the verb *be*. Predicative adjectives in Arabic pose a challenge for this analysis: the adjective comparable to *intelligent* in Chomsky's example bears a nominative Case. Moreover, the analysis does not reflect the asymmetry in definiteness which Arabic nouns and predicative adjectives show.

3. *Small Clauses*

As Chomsky (1993) and Fassi-Fehri (1993) observe, verbless or Zero Copula sentences structurally resemble Small Clauses (SCs) in that they are comprised of a nominal followed by an adjectival element, and the fact that both syntactic elements can be selected (as a single constituent) by higher syntactic element (e.g., verbs, complementizers, etc). It is thus appropriate, at this point, to review some of the analyses proposed for SCs in order to reach a better understanding of what the correct internal structure of adjectives could be.

The SC structure has received considerable attention in the literature, resulting in a variety of analyses; that said, two principal theories of SC emerge: Small Clause Theory and Predication Theory, each of which are discussed in the following sub-sections.

3.1 Small Clause Theory

The term "Small Clause" was first introduced by Williams (1975), and was later adopted by others. Sportiche (1995) argues that a constituency test (i.e., coordination) which conjoins phrasal constituents is one piece of evidence for the existence of SCs, indicating that SCs are indeed constituents. Sportiche claims that the bracketed strings in the translation of the French data in (4), for example, form a D-structure constituent:

(4) Louis considère Marie drôle et Pierre stupide.
Louis considers [Mary funny] and [Bill stupid].

Arabic predications conform to the constituency test, as can be seen in the following example:

(5) [ar-rajul-u mariiḍ-u-n] wa [al-bint-u naa?im-at-u-n]
DEF-man-NOM sick(M.S.)-NOM-INDEF and DEF-girl-NOM asleep-F.S.-NOM-INDEF
'The man is sick and the girl is asleep'

The bracketed Zero Copula sentences can be joined by the conjunction *wa* 'and', thus indicating that each forms a constituent (like the SCs in (4)).

Various analyses concerning the exact nature of the internal structure of SCs have been proposed within the context of Small Clause Theory. The next section details these analyses.

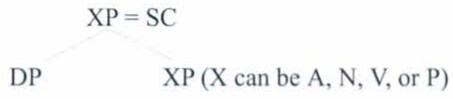
3.1.1. Internal structure of SCs

While the categorical status and internal syntactic structure of the SC has been a subject of considerable debate in the literature, two principal viewpoints can be identified: (A) SCs as maximal projections of their predicates, or as (B) functional projections.

A. Small clauses as maximal projections of their predicates

The argument that SCs are maximal projections was originally proposed by Stowell (1981). In Stowell's analysis, a SC is a maximal projection of the SC's predicate, with the subject adjoined to the projection of this predicate (i.e., in its spec), as in (6):

(6)



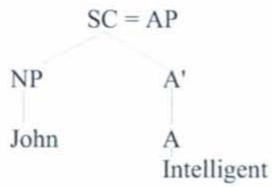
Consider the bracketed constituent in the following example:

(7) I consider [John intelligent]

According to Stowell, this constituent is a SC which has the structure [$_{AP}$ John [$_{A}$

intelligent]], or the representation shown in (8):

(8)



The SC node is a projection of the predicate adjective *intelligent*. The subject, *John*, is in spec SC (=AP).[68] It is not clear from (8) how Case is assigned/checked for each syntactic element, nor is it clear how agreement in φ-features and Case in languages such as Arabic would be accounted for.

B. Small clauses as functional projections

The analysis of SCs as functional projections has received a lot of support in the literature (see, e.g., Endo, 1991; Suzuki, 1991). Suzuki (1991) argues that SCs are best analyzed as AgrPs, meaning that the structure of the SC corresponds to that of AgrP, so that SCs will have the following representation:

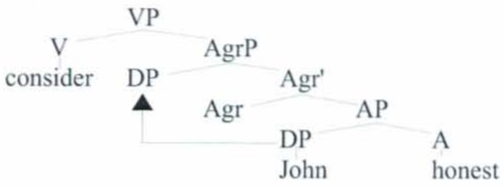
(9) $[_{AgrP}$ DP $[_{Agr'}$ Agr XP]]

68 A number of other researchers have argued along the same lines that SCs are maximal projections of their predicates (e.g., Moro, 1995; Rothstein, 1995, among others).

Based on his investigation of negation, Suzuki concludes that a SC lacks a T head on the grounds that neither NegP nor IP occur in a SC.

Similarly, Endo (1991, p. 61) proposes the structure in (10) for the SC in *I consider [John honest]*, where *John* raises to spec AgrP to check its accusative Case with the verb:

(10)

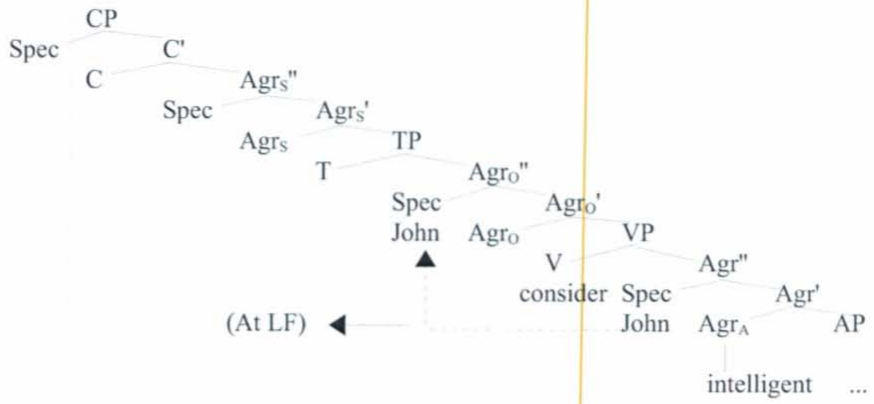


Following this line of thought, Chomsky (1993) concurs that SCs are AgrPs (see, (2) above). This AgrP can be selected as a SC complement to the verb *consider*, thus an AgrAP exists in the SC complement *John intelligent* as in following representation:

(11) I consider [$_{AgrAP}$ John [AgrA' AgrA [AP intelligent]]]

According to Chomsky (p. 7), the subject *John* in (11) raises to spec Agr_OP at LF where it enters into a checking relation with the matrix verb, thus receiving accusative Case (cf. (3) above):

(12)



By moving to spec Agr_O, the NP *John* enters into different agreement relations: (a) with adjectival complex [A Agr_A] (see, (2) above) and (b) with Agr_O (spec-head relation).

Notice that a corresponding Arabic example to (11) would be:

(13)	ʔiʕtabar-tu	al-walad-a	ðakyy-a-n
	considered-I	DEF-boy-ACC	intelligent(M.S.)-ACC-INDEF
	'I considered the boy intelligent'		

In (13), the adjective *ðakyy* 'intelligent(M.S.)' shows agreement with subject noun *al-walad* 'DEF-boy' of the SC in φ-agreement and Case (but not definiteness).

Although Chomsky's analysis predicts that the subject will have overt agreement with the

predicate in SCs, it still does not explain how the adjective in a predicate position will receive accusative Case in the Arabic example in (13), nor does it explain the asymmetry in definiteness between the noun and the adjective.

The next sub-section considers the second major approach to SCs: The Predication theory.

3.1.2. The Predication Theory

Williams (1983) introduced the Predication Theory to syntactic theory. Williams argues that the bracketed string in the sentence *I consider [John intelligent]* is not a clausal constituent; instead, he argues that the whole phrase *consider John intelligent* is a constituent. Williams (1983), then, proposes the analysis in (14) for the sentence *I consider John intelligent*:

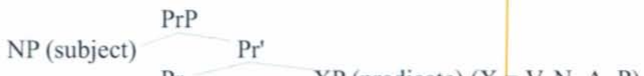
(14) I [$_{VP}$ consider [$_{DP}$ John] [$_{AP}$ intelligent]]]

Under Williams' analysis, the DP is directly governed by the verb and the AP is the predicate for this DP.

Bowers (1993, p. 595) proposes a unified account for both main clause and SC predication by introducing a functional projection (*Pr*) for predication. According to

Bowers, the maximal projection of Pr is PrP, which is simply a SC:

(15)

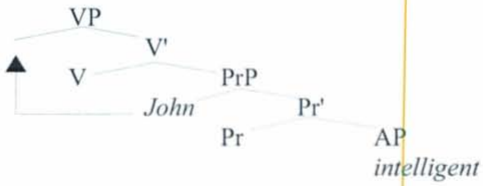


Thus, for the sentence *I consider John intelligent,* the representation will be:

(16) $[_{IP}$ I consider $[_{PrP}$ John $[_{Pr'}$ $[_{Pr}$ e] $[_{AP}$ intelligent]]]

As for how Cases are assigned/checked in this structure, Bowers argues that they are assigned/checked in a spec-head relation: The noun *John* enters into a spec-head relation with V in order to check its accusative Case:

(17)



Thus, the noun *John* must raise to spec VP in order to receive accusative Case from V. The analysis, however, does not indicate how the adjective *intelligent* receives Case under (17).

Furthermore, Bowers' analysis cannot be extended to Arabic SCs as it does not account for the fact that both the subject as well as the adjectival predicate in (13) carry accusative Cases, nor does it account for the φ-agreement between the noun and the adjective in this example.

A different analysis of the structure in example (16) has been proposed by Contreras (1995). Contreras' analysis seems to combine the two approaches (i.e., SC and Predication theories). According to Contreras, verbal and adjectival predicates are SCs, and both are headed by [+V] predicates. Nominal and prepositional predicates, on the other hand, are not SCs, and both are headed by [-V] predicates.

Contreras states that verbal and adjectival predicates differ from nominal and prepositional predicates in terms of the identification of the local domain within which anaphors can be bound. That is, in the [+V] predicate, the embedded clause which contains the anaphor is the domain for that anaphor. Consider the following examples from Contreras (1995, p. 136):

(18) We consider [Mary proud of herself].

(19) *We consider [Mary proud of ourselves].

(20) We saw [Mary embarrass herself].

(21) *We saw [Mary embarrass ourselves].

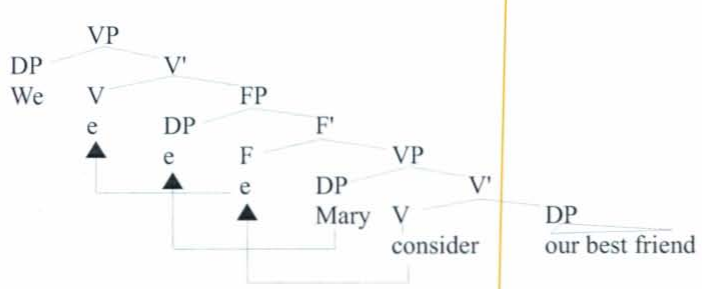
On the other hand, the [-V] predicates (i.e., nominal and prepositional) show a larger governing category:

(22) They$_i$ consider John each other$_i$'s friend.

(23) They$_i$ want the wind away from each other$_i$.

Given the difference between [+V] and [-V] predicates, *Mary* in examples (18) and (20) is a subject, whereas *John* and *the wind* in (22) and (23) are not. Therefore, verbal and adjectival predicates must have a different structure from that of prepositional and nominal predicates. Contreras, thus, provides the following structure for the sentence *We consider Mary our best friend* (p. 141):

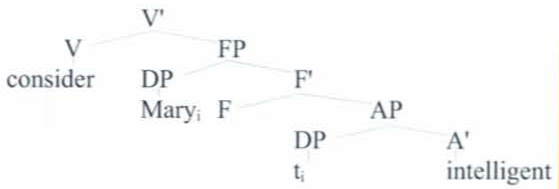
(24)



The verb *consider* raises first to F and then to V. *Mary* then raises to spec FP in order to check its Case feature. As for the adjectival predicate in the sentence *We consider Mary*

intelligent, Contreras (p. 138) proposes the following structure, where the subject of the SC (i.e., *Mary*) raises to spec FP in order to get Case from the matrix verb:

(25)



Considering the (tree) structure in (25), it is again not clear how the subject will check its Case feature: The subject is not in a spec-head relation with the verb *consider*, unless a further move of the subject is made. If we compare this structure with that in (24), the head F in (25) is left empty, and does not seem to have any role in this structure.

Furthermore, for those structures where the subject and the predicate observe full agreement in ϕ-features as well as in Case (e.g., (13), in Arabic), this analysis does not show explicitly how this full agreement is obtained between the two elements, nor does it explain the asymmetry in definiteness between these elements.

In conclusion, what we notice that is common to the analyses that have been reviewed is the positioning of the adjective after the noun it applies to, in both predicative and SC constructions. Only attributive adjectives are placed before the nouns they modify, either

by adjoining to this noun or by taking this noun as a complement. As has been shown, none of these analyses reflects the facts of agreement in φ-features and Case, or the disagreement in definiteness between the noun and the predicative adjective in the Arabic examples. Thus, as far as the criteria proposed for a good theory of Arabic APs, none of these analyses seems to satisfy to the conditions set by my initial criteria.

In the following section, I will review different analyses proposed for Arabic APs. Specifically, the first subsection will be concerned with Zero Copula constructions. The second subsection reviews a number of analyses of Arabic SCs.

4. Analyses of Arabic APs in different syntactic structures

Thus far, it has been shown that Arabic adjectival elements show different agreement properties with the nouns they apply to; for example, when used attributively, adjectives show full agreement with the nouns they modify (i.e., in φ-features, Case, and definiteness). However, when used predicatively, adjectives show partial agreement with the nouns they are predicated of; specifically, they do not agree in definiteness, but agree in φ-features and Case (in certain constructions).

This section reviews some of the analyses that have been proposed to deal with

constructions containing Arabic APs. I begin by reviewing traditional accounts of these constructions, and then move on to considering more contemporary analyses of Zero Copula constructions. As will be shown, such analyses fail to satisfy the criteria (i.e., agreement (a)symmetries between nouns and adjectives) set for what a good theory of Arabic APs should be.

4.1 Zero Copula

4.1.1. Traditional grammarians

As we have seen, in Arabic, adjectives can occur in Zero Copula constructions such as (26):

(26)	ar-rajul-u	mariiḍ-u-n
	DEF-man-NOM	sick(M.S.)-NOM-INDEF
	'the man is sick'	

Traditional Arab grammarians (e.g., Hasan, 1976; Ibn Yaʕiiš [d. 1245]; Jurjaani [d. 1078]) characterize verbless (or Zero Copula) constructions such as (26) as *mubtadaʔ-xabar,*[69] to which contemporary linguists refer as 'topic-comment', 'subject-predicate,[70]' or 'equational

69 Peled (2009) states that the term *mubtadaʔ* 'topic/subject' has been deduced from the work of the famous traditional grammarian Sibaweihi ([d. 796]).

70 Plunkett (1993) analyzes the first NP as a subject.

sentences.[71]

For both traditional and contemporary researchers, the source(s) of the nominative Case (values) (i.e., Case-assigner/-valuer) on both the subject and the predicative is an issue which has stirred up much debate among both traditional and contemporary researchers. It has been proposed by Sibaweihi ([d. 796]), for instance, that it is *ʔibtidaaʔ* (i.e., initial-positioning of the subject/topic) that is responsible for the nominative Case on the subject, and that the nominative Case value on the predicate is assigned by the subject itself. Other grammarians (e.g. Farraʔ ([d. 822]), as cited in Peled, 2009) argue that both the subject and the predicate assign nominative Case values to each other.

Like Sibaweihi, Ibn Yaʕiiš argues that *ʔibtidaaʔ* is the source of the nominative Case values on both the subject and the predicate; however, he diverges from Sibaweihi by stating that the nominative Case value on the predicate is *indirectly* assigned by *ʔibtidaaʔ* (the operator) through the subject, which receives its Case *directly* from the operator.

Despite the extensive attention Case has received in the traditional analyses,[72] the other agreement aspects (i.e., φ-features and definiteness) nouns and adjectives exhibit (especially when adjectives are used as attributives or *ṣifaat*) remain, by comparison, rather neglected. In other words, these analyses do not elaborate on such aspects of

71 Plunkett (1993) refers to this type of construction as *predicational*.

72 Most of the current reference books on Arabic grammar express (more or less) the same analyses proposed above for Case in Zero Copula constructions.

agreement, meaning that they do not go beyond the description of the facts.

In the following section, some of the contemporary, generative-based analyses offered for Arabic Zero Copula constructions will be considered. It should be made clear that while the (a)symmetries in Case and agreement observed in Arabic APs might not be the prime concern of some of the analyses to be reviewed, these (a)symmetries will be discussed as if they were so.

4.1.2. Fassi-Fehri (1988, 1993, 1999)

In his analysis of agreement in Arabic, Fassi-Fehri (1988) analyzes the affix on the following verb as a subject pronominal[73] (p. 108):

(27) jaa?-uu
came-3M.Pl.
'They came'

By extension, Fassi-Fehri claims that affixes on adjectives are subjects. To him, these subjects agree with the nouns in inflection; he states that "what looks like an agreement marker is actually a pronominal affix that is anaphorically related to the THEME in a left dislocated construction" (p. 118):

73 Notice that the same affix has been analyzed as an agreement marker (see, e.g., Benmamoun, 2000).

(28) l-banaat-u kariimat-**un**[74]
def-girls-nom generous.FP
'girls are generous'

According to Fassi-Fehri, agreement between the NP (topic[75]) *l-banaat* 'def-girls' and A is due to the existence of a resumptive pronoun in the predicative AP (which functions as a subject for the adjective), and this "anaphoric binding" triggers agreement (p. 140).

Fassi-Fehri (1993) argues for a phonologically null verbal copula in Arabic SCs (or verbless sentences[76] as in (29)). He further argues that a SC in Arabic contains a TP, in addition to the null copula. The copula fails to lexicalize when the clause has a [-PAST] tense, but is forced to lexicalize when the tense is [+PAST]. Consider the following example:

(29) ar-rajul-u mariiḍ-u-n l-ʔaan
DEF-man-NOM sick(M.S.)-NOM-INDEF now
'the man is sick now'

Notice that the temporal adverb *l-ʔaan* 'now' indicates that the tense is [-PAST]; thus,

74 Both transliteration and glossing in example (28) are Fassi-Fehri's.
75 Fassi-Fehri analyzes the pronoun *you* in the following example as a Topic:
(i) ʔanta mariiḍ-un
you sick(M.S.)-Nom.MS
'you are sick'
76 Notice that SCs are often referred to as Zero Copula. However, the difference between the two structures will become evident as the discussion progresses.

according to Fassi-Fehri's analysis, the copula fails to lexicalize. Compare this example with the following:

(30) * ar-rajul-u mariiḍ-u-n ʔamsi
DEF-man-NOM sick(M.S.)-NOM-INDEF yesterday
'the man is sick yesterday'

The ungrammaticality of example (30) is attributed to the discrepancy in tense: The temporal adverb *ʔamsi* 'yesterday' indicates that the tense is [+PAST]; whereas, the Zero Copula sentence indicates a present or [-PAST] tense. The construction in (30) can be rendered grammatical, however, if we add the copula *kaana* 'was' as in (31):

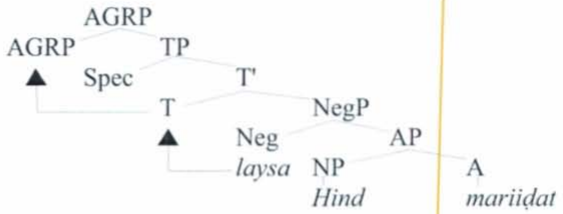
(31) kaana ar-rajul-u mariiḍ-a-n bi l-ʔamsi
was DEF-man-NOM sick(M.S.)-ACC-INDEF in DEF-yesterday
'the man was sick yesterday'

Here, the copula carries a [+PAST] tense; therefore, *kaana* is lexicalized. In addition to T, Fassi-Fehri (1993) claims that Zero Copula sentences seem to contain sentential AGR (agreement). AGR is not usually realized, except in some negative contexts (p. 88):

(32) lays-**at** Hind-un mariiḍ-**at**-an
neg-**F.S.** Hind-NOM sick-**F.S.**-ACC
'Hind (female name) is not sick'

The negative marker *laysa* agrees with the noun *Hind* in [Gender] and [Number] (like the adjective). According to Fassi-Fehri, *laysa* assigns accusative Case to the adjective under adjacency, thus *laysa* must be generated lower than AGR and T, as the following tree structure of example (32) shows (Fassi-Fehri, 1993, p. 88):

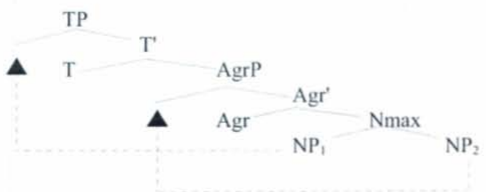
(33)



Laysa incorporates with T and AGR to ensure that the right form of agreement is realized. (Notice that, like Stowell, 1981, the subject originates in spec AP).

Zero Copula sentences in Arabic then could have different functional categories[77] (e.g., TP, AgrP, NegP). Nevertheless, Fassi-Fehri's (1993) analysis does not explain how the

77 Similarly, Plunkett (1993) proposes that Tns and Agr are the two functional heads which exist in predicational sentences, and argues (p. 254) that the D-structure of a predicational sentences is:
(i)



According to Plunkett, the subject NP_1 and the predicate NP_2 receive *default* nominative Cases. Plunkett argues that a default mechanism allows a head to assign nominative Case to its specifier; therefore, NP_1 raises to spec TP, and the predicate NP_2 raises to spec AgrP.

predicate in example (34) (presumably containing a copular verb) gets nominative Case when the copula is null, but receives accusative Case when it is phonetically realized as in (35):

(34) al-bayt-u jamiil-u-n
DEF-house-NOM nice(M.S.)-NOM-INDEF
'the house is nice'

(35) kaana al-bayt-u jamiil-a-n
was DEF-house-NOM nice(M.S.)-ACC-INDEF
'the house was nice'

Another problematic issue with this analysis concerns φ-agreement between the noun and adjective. Fassi-Fehri's claim that AGR is realized *only* in negative contexts leads to empirical contradiction, for agreement is obtained in non-negative contexts as well. Thus, the analysis provides no explanation for agreement; that is, it does not explain how the exact φ-feature values of the noun are reflected on the adjective, nor does it address the asymmetry in definiteness. Moreover, it is not clear why the copula remains null in the present tense, but is lexicalized otherwise. That is, what special effect does the present tense have on copulas?

Fassi-Fehri (1999) proposes a different analysis for Arabic APs. He argues that Arabic is (underlyingly) an A-N language (cf. his 1993 analysis). Following Cinque's (1996) Left

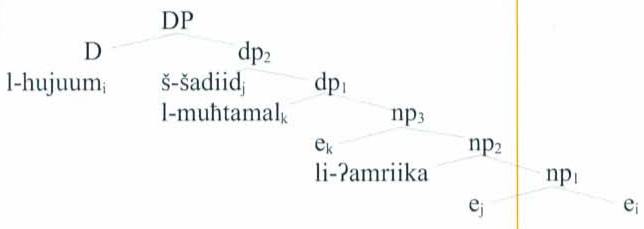
Specifier Hypothesis (LSH), which states that all prenominal and/or postnominal modifiers (including adjectives) generate as left specifiers of N, Fassi-Fehri argues for independent raisings of N and A (or AP) in order to derive the surface word order (i.e., N-A) and maintain the LSH.

Assuming Chomsky's (1995) Attract movement theory, Fassi-Fehri argues that AP movement is motivated by the richness of the inflectional properties of Arabic adjectives. APs target DP to check their agreeing Case, definiteness, and φ-features against those of a higher functional head, which presumably has strong features. Consider the following example from Fassi-Fehri (1999, p. 122):

(36) l-hujuum-u š-šadiid-u l-muħtamal-u li-ʔamiriika ʕalaa l-muqaawamat-i
DEF-attack-NOM DEF-violent-NOM DEF-probable-NOM of-America on DEF-resistance-GEN
'The probable violent attack of the resistance by the US'

The head noun *l-hujuum* 'the attack' is modified by the adjectives *š-šadiid-u* 'the violent' and *l-muħtamal* 'the probable'. Notice that each adjective agrees with the noun it modifies in [Number], [Gender], Case, and definiteness. According to Fassi-Fehri, the structure for this sentence is as shown in (37):

(37)



The derivation in (37) proceeds by raising the highest AP *l-muħtamal* to spec of dp_1 (in order to target agreement), thus forming a new category. The next raising is executed by AP *š-šadiid* which targets the spec of the newly formed category: dp_2. The noun *l-hujuum* can then move to spec of DP to derive the correct word order.

While Fassi-Fehri's theory of the derivation of multiple *attributive* APs derives the correct word order, it does not provide a clear mechanism of how agreement and Case can be checked/valued, especially if we consider his argument that the feature-checking process proceeds in a spec-head relation between the functional head 'd' and the adjective in the spec of its projection.

Considering the derivation in (37), the adjectives raise and target the functional (agreement) head 'd'; for example, when the adjective *al-muħtamal* raises to spec dp_1, it targets "one and the same cluster of features, so-called Agr features"; thus checking agreement features of Case, definiteness, and φ (p. 122). Knowing that the agreement features on adjectives are dependant on those of the noun they modify, it is not clear how

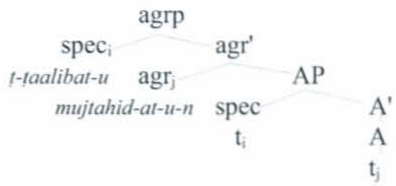
these features are given their specific values of *singular* and *masculine* (on the adjectives *šadiid* and *muħtamal*) when they target the agreement head 'd', especially if we consider that the noun *l-hujjuum* 'def-attack' raises after both adjectives have already raised. Likewise, agreement in definiteness cannot be said to occur unless the noun has raised to a specific position, thus allowing agreement in definiteness to become possible. By the same token, Fassi-Fehri's argument also fails to explain how the possible agreement in Case between the head noun and the modifying adjective is achieved.

4.1.3. Al-Shamrani (1994)

Al-Shamrani (1994) argues that Arabic verbless clauses (particularly those with predicative adjectives) are headed by AgrP. He, however, proposes a *small* agrp for verbless clauses, and this small agrp does not mark the [Person] feature. Al-Shamrani (p. 222) proposes the representation in (39) for the example in (38):

(38) aṭ-ṭaalib-at-u mujtahid-at-u-n
DEF-student-F.S.-NOM hard-working-F.S.-NOM-INDEF
'the (female) student is hard-working'

(39)



Under (39), the subject is generated in spec of AP. Once it raises to spec 'agrp', the subject discharges its [Gender] and [Number] features to the head 'agr' (in a spec-head configuration). The adjective raises to 'agr', where it merges with "weak" [Number] and [Gender] features. According to Al-Shamrani, 'agr' is not a Case assigner, thus the nominative Case on the predicative adjective must be taken to be a *default* Case.

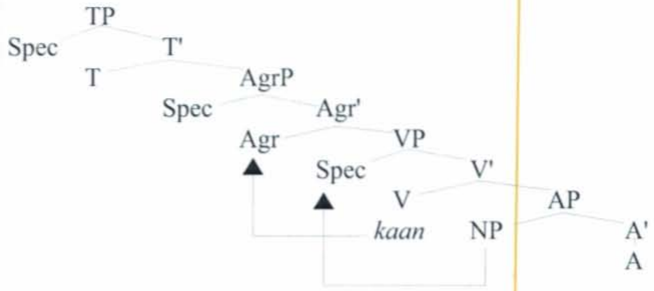
Likewise, the nominative Case values on the NP (as well as that on the AP) in (38) are forms of default Cases. While Al-Shamrani does not exclude the possibility that this nominative Case is assigned by Infl, he admits that this is problematic since this head would have to assign two Cases in two different directions.

As we have seen, when preceded by the verbal copula *kaana* 'was', the Case on the predicative adjective in (38) is accusative:

(40) kaan-at aṭ-ṭaalib-at-u mujtahid-at-a-n
was-F.S. DEF-student-F.S.-NOM hard-working-F.S.-ACC-INDEF
'the (female) student was hard-working'

Al-Shamrani explains the asymmetry (in Case) between the noun and the adjective by proposing the following representation for (40):

(41)



Under this view, VP, as opposed to AP (cf. (39)), is headed by AgrP. According to Al-Shamrani, the subject NP raises from spec AP to spec VP in order to receive nominative Case; as he puts it, nominative Case is "assigned by the merging of 'V' and 'Agr'" (p. 234), thus indicating that V raises to the head Agr.

As for the agreement features on the adjective, Al-Shamrani claims the adjective receives these features lexically (i.e., the NP transmits these features to its head=A). The accusative Case on the adjective is assigned by the verb "inherently" (p. 234).

It is not clear how the verb could have skipped the NP in spec AP and assigned its accusative Case (inherently) to the adjective; in addition, the inherent capability of the V must be elaborated. Nor is it obvious how the combination of V and AgrP result in a head (of some type) that is able to assign a nominative Case to the raised NP (in spec VP).

Although this analysis has attempted to explain φ-agreement in verbless constructions, it does not explain how these features are transmitted in (41), especially if we consider that the subject NP and the adjective in (39) occupy the same positions (i.e., spec-head). In this case we would expect the NP to "transmit" its agreement features to the adjective, thus rendering the movement of the NP and the adjective (as in (39)) superfluous. Notice, also, that definiteness is not accounted for in this analysis.

It seems that the notion of default Case is untenable on various grounds. First, it echoes the traditional treatment of nominative Case on the *mubtadaʔ-xabar* 'subject-predicate' construction which can be summarized in the following excerpt "*...fal-xayr-u fi ʔihmaliha wa tanasiiha wa al-ʔiqtiṣaar-u ʕala maʕrif-at-i ʔanna al-mubtadaʔ-a marfuuʕ-un wa al-xabar-a marfuuʕ-un kaðaalik.*" ("...it is better to ignore and forget [the questions concerning nominative Cases] and instead understand that the subject is nominative and the predicate is nominative too"- Hasan, 1976, p. 447, Vol. 1). Second, the adoption of default Case[78] into our theory does not add much to the enquiry of the existence of Case (i.e., it does not explain why Case exists in the language system). Assuming default Case does not address the asymmetrical facts about Case values in Arabic APs (e.g., in Zero Copula constructions introduced by a copular verb (as in (42)) or complementizer (as in

78 Schütze (2001) argues for a form of default Case which is postsyntactic (i.e., morphological Spell Out of nominals). Being postsyntactic, this Case is different from the traditional default Case in that it does not licence nominal expressions, nor does it violate the Case Filter (i.e., it is invisible to syntax). According to Schütze, this default Case is spelled out on nominals that "are not associated with any case feature assigned or otherwise determined by syntactic mechanisms." (p. 206).

(43)). We are still left with no answer to the questions of what the source of Case value is.

(42) kaana al-bayt-u jamiil-a-n
was DEF-house-NOM nice(M.S.)-ACC-INDEF
'the house was nice'

(43) ʔinna al-bayt-a jamiil-u-n
Comp DEF-house-ACC nice(M.S.)-NOM-INDEF
'(It is confirmed) that the house is nice'

4.1.4. Benmamoun (2000, 2008)

Benmamoun (2000, 2008) proposes that verbless sentences in Arabic contain a functional projection which is marked for tense, but contain no verbal copula. Benmamoun claims that all the previous analyses of Arabic Zero Copula sentences have failed to explain why a verb is not required in Zero Copula sentences. To address this problem, he develops a categorial feature theory of tense and proposes that verbless sentences are full clauses which exhibit all the properties associated with tensed clauses, including the existence of tense projections.

Based on evidence from *wh*-movement in verbless sentences as in (44), and the fact that embedded verbless sentences can be headed by the complementizer *ʔinna/ʔanna* as in (45), Benmamoun (2008) concludes that verbless sentences must be headed by a C head:

(44) ʔayna al-walad-u
where DEF-boy-NOM?
'where is the boy?'

(45) ʕalim-tu ʔanna ar-rajul-a mariiḍ-u-n
knew-I that DEF-man-ACC sick(M.S.)-NOM-INDEF
'I knew that the man is sick'

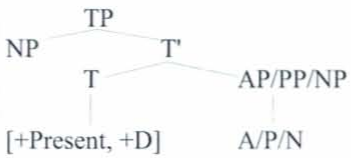
Following Chomsky (1995), Benmamoun (2000, 2008) argues that Tense in Zero Copula sentences projects a TP. Depending on the tense it carries (i.e., past, present, or future), this TP is specified for [+V] (verbal) and [+D] (nominal) features. Benmamoun identifies these features as "[+D] expresses the generalization that tense interacts with the subject (Extended Projection Principle [EPP]), and [+V] expresses the generalization that tense merges with verbs in most languages" (2000, p. 13).

Given the fact that the construction in (46) is understood to express meaning in the present tense, Benmamoun argues that the TP in such nominal sentence is specified for the feature [+D] only.

(46) ar-rajul-u mariiḍ-u-n
DEF-man-NOM sick(M.S.)-NOM-INDEF
'the man is sick'

Benmamoun (2008, p. 115) proposes the following for verbless sentences with present tense interpretation:

(47)



The nominal, [+D] feature on T must be checked, a process which, according to Benmamoun, can be carried out by the subject[79]. (Notice that the subject noun is generated in spec TP).

Compare the example in (46) with the following:

79 Note that a similar structure for Arabic verbless sentences (with predicative adjectives) was proposed by Eid (1991):

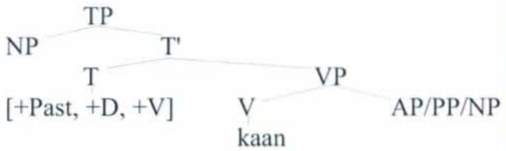
(i)

Under this representation, the subject originates in spec IP, and the predicative adjective is under XP. The head 'I' bears the agreement features.

(48) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick(M.S.)-ACC-INDEF
'the man was sick'

As we have seen, to denote past tense reference, the copular verb *kaana* must be used. (Recall that when *kaana* is used, the predicate carries accusative Case). According to Benmamoun, Tense in this example has a [+V] feature, in addition to [+D], which needs to be checked; thus, the copular verb *kaana* is inserted to check the [+V] feature of T:

(49)



(Benmamoun, 2008, p. 116)

Benmamoun's analysis, however, does not discuss how Case[80] is assigned/checked in this structure, nor does it explain how agreement in ϕ-features ([Number] and [Gender]) between the subject and the predicate is achieved. The lack of definiteness on the predicate is also not accounted for under this analysis.

80 Except for his (2008) conclusion which states that the nominative Case value on the subject of a verbless sentence is structural rather than default.

4.1.5. Kremers (2003)

Kremers proposes an analysis of Arabic noun phrases in which he follows (with some essential modifications) Kayne's (1994) Antisymmetry approach. In his theory, Kremers proposes a searching procedure which he calls Recursive Linearization. This procedure searches syntactic structures for terminals (syntactic heads) for the purpose of Spell-Out. According to Kremers, this procedure decides which head should be spelled out first.

As far as the internal structure of APs in Arabic is concerned, Kremers argues that an adjectival phrase contains all the elements that make up a proposition (a predicate, the predicate's arguments and a subject). Thus, an AP is a phase, in the sense of Chomsky's (2001) Phase Theory. Following Abney (1987), Kremers proposes that an AP is headed by a DegP, as in example (50). In this example, even though the AP does not have an overt subject, Kremers proposes that it contains a subject *pro*.[81]

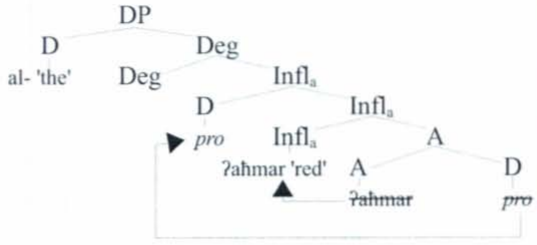
(50) al-bayt-u [$_{\text{DegP}}$ –l-ʔabyaḍ-u *pro*]
the-house-nom the-white-nom
'the white house' (Kremers, p. 112)

For Kremers, this *pro* functions as a resumptive pronoun which must be licensed locally (inside the AP). To ensure that *pro* is licensed, a D head is added to the AP so that the

81 Note that traditional Arab grammarians have reached a similar conclusion about the existence of a null pronoun in such constructions (see, e.g., Al-Nadiri, 2005; Hasan, 1976).

resumptive pronoun becomes bound. Consider the internal structure of DegP (Kremers, 2003, p. 102) (notice that the adjective is immediately headed by Infl, which is responsible for agreement:[82])

(51)



Kremers adds that this D head must itself be identified. Being at the edge of the phase, its identification does not need to take place locally; thus, he proposes two ways for the identification of the D head:

a. APs in Arabic can be used independently as in *aṭ-ṭawiil-u* 'the tall(M.S.)'. In this case, then, the D head is identified like any other D head of an NP which "requires some interpretational process beyond syntax" (footnote, p. 113).

b. If this AP is merged inside an NP (modifying the head N), then it will be bound by the head of the noun, D. Thus, features of the nominal D are transferred to the adjectival D (features include definiteness, Case, and ϕ-features). The ϕ-features are then transferred

82 The AP, in Kremers' analysis, takes a complement (cf. Baker, 2008, in chapter 3).

to the resumptive pronoun *pro* which is bound by the adjectival D. Thus, according to Kremers, Case, definiteness, and ϕ-features on the adjective *l-ʔabyaḍ* 'DEF-white(M.S.)' are inherited from the noun in example (50). Consider the following structure for (50):

(52)

(Kremers, p. 113)

It is not clear how all the agreement features of Case, definiteness, and ϕ are positioned in D; that is, we do not know how the nominal D gets all of its agreement features. Kremers does not provide any justification or elaboration on the mechanism of transfer of these features to the adjectival D, nor does he explain the binding relation between nominal and adjectival D heads.

4.1.6. Shlonsky (2004)

Shlonsky (2004) proposes an account of the internal structure of Semitic[83] noun phrases, rejecting the widespread notion of N to D movement, and arguing instead for phrasal

83 Modern Hebrew and Arabic, in particular.

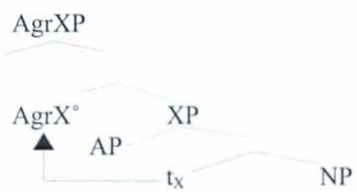
noun movement. On this view, adjectival phrases originate in the specifier position of an XP as in (53):

(53)

(Shlonsky, 2004, p. 1496)

According to Shlonsky, X is a functional head which carries φ-features as well as the semantic features associated with the adjective. The derivation begins when the head X raises and an AgrP is projected from X (i.e., AgrP is associated with the XP that contains AP), as in (54):

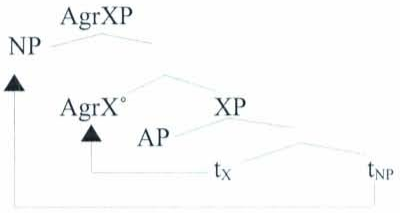
(54)



(Shlonsky, 2004, p. 1496)

Agreement takes place in the AgrXP domain. Attracted by X, the noun phrase raises to the spec position of AgrXP as in (55):

(55)



(Shlonsky, 2004, p. 1496)

For Shlonsky, agreement between the noun and the adjective comes about when the functional head X (which carries φ-features) enters into a spec-head relationship with the raised noun.

Although Shlonsky's analysis correctly reflects the word order of N-A in both Hebrew and Arabic, it raises some issues: The analysis does not explain why agreement should not take place between the head X and the NP inside XP (as in (53)), thus avoiding movement of X and NP. If, however, the NP is projected in spec XP (in place of AP), then the spec-head relation between NP and X would result in X bearing the same agreement features, maintaining the correct word order. Finally, assuming that (55) represents full agreement in attributive adjectives (including Case morphology), it is not clear how this Case will be checked under this system.

Predicative adjectives in Arabic, in particular, pose challenges for this analysis. Assuming that the adjective originates in spec containing XP (as in (53)), it is not clear how the adjective would receive accusative Case in constructions with the verbal copula

kaana 'was' (as in (48)), while the subject NP receives nominative Case.

Following Borer (1996), Shlonsky considers definiteness on adjectives in Arabic as a [±definite] φ-agreement feature, which must be added to other agreement features (i.e., [Gender], [Number], and Case) on the adjective. Although Shlonsky does not state explicitly which type of adjectives he is accounting for, it could be inferred that he must be referring to attributive adjectives (because these show full agreement with their modified nouns).

This raises a question about the status of definiteness on predicative adjectives: How can the indefiniteness predicative adjectives show be accounted for, especially if we consider definiteness to be a member of the φ-features on an adjective?

The following subsection reviews various pre-Agree analyses that have been proposed to deal with Arabic SCs. As has been shown, SCs share many characteristics with Zero Copula constructions; this has led some researchers to account for them under a single analysis.

5. *Arabic Small Clauses (SC)*

5.1 Abu-Joudeh (2005)

Abu-Joudeh (2005) notes that subject and predicate in embedded clause constructions in Arabic resemble Zero Copula sentences in that they bear Case, but show no overt Case assigner(s). Compare the Zero Copula construction in (56) with (57), which has a verbal predicate:

(56) Ali-un muxliṣ-u-n
Ali-NOM sincere(M.S.)-NOM-INDEF
'Ali is sincere'

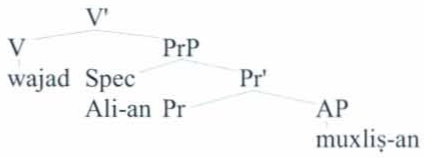
(57) wajad-tu [Ali-an muxliṣ-an]
found-I Ali-ACC sincere-ACC
'I found Ali sincere' (Abu-Joudeh, 2005, p. 124):

The bracketed construction in (57) contains a subject and a predicate, and each (non-verbal) constituent carries accusative Case. Since there is no *overt* verb inside the bracketed construction to which the accusative Case could be attributed, Abu-Joudeh analyzes the bracketed construction as an instance of a SC or Zero Copula construction.

Not only do the bracketed subject and predicate in (57) bear Case, they have the same ϕ-features (i.e., masculine, singular). To explain agreement in [Number] and [Gender],

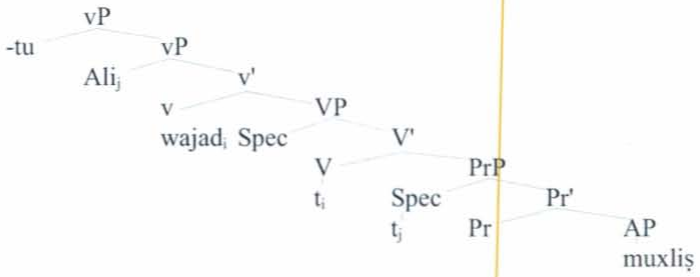
Abu-Joudeh, following Bowers (1993), assumes the existence of a functional projection (i.e., Predicate Phrase (PrP)) which mediates this type of agreement, and bears agreement features. Abu-Joudeh also proposes that the subject *Ali* in (57) checks its Case with the matrix verb in a spec-head configuration. The predicate *muxliṣ* 'sincere(M.S.)', on the other hand, checks its Case under government with the subject of which it is predicated. Abu-Joudeh, therefore, proposes the following structure for the bracketed portion of (57): (Modified from Abu-Joudeh, p. 126)

(58)



According to Abu-Joudeh, the complete syntactic derivation of (57) would be (59): (Modified from Abu-Joudeh, p. 127)

(59)



In this configuration, both the Case and ϕ-features of the predicate are licensed through the **trace** of the subject which raises to spec vP in order to check its accusative Case against that of the matrix verb (under spec-head configuration). Thus, the accusative Case on the predicate *muxliṣ* is the result of agreement with the subject *Ali.*

According to Abu-Joudeh, the functional projection PrP has agreement features; if this is correct, then it is not clear how the agreement features on the head Pr (predicate) of PrP are checked. In other words, considering that the subject *Ali* in (59) starts off in spec PrP, we would expect this subject to, at least, check or share its agreement features with those on the head Pr (i.e., in-situ). If this is possible, then the exact mechanism of the sharing and/or checking of agreement features is missing in the analysis.

Movement of the subject *Ali* to spec vP (i.e., to check its accusative Case) requires further justification since in spec PrP, the subject is in a position which should allow it to receive Case from the verb *wajad* 'found'.

Abu-Joudeh claims that the Case and ϕ-features on the predicate *muxliṣ* are licensed via the trace of the subject *Ali.* This conclusion needs further clarification as the precise mechanism via which agreement features and Case are transmitted is not clearly articulated, thus adding to the complexity of extending this approach to full clauses.

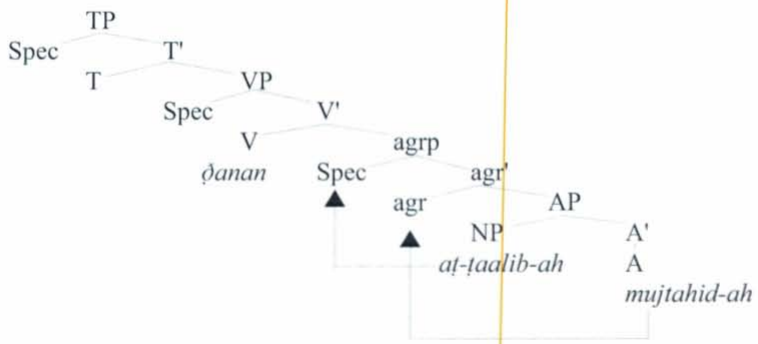
5.2 Al-Shamrani (1994)

The structure in (38) can be seen as a SC constituent subcategorized for by the verb *ðanan* 'thought', as in (60):

(60) ðanan-tu aṭ-ṭaalib-at-a mujtahid-at-a-n
thought-I DEF-student-F.S.-ACC hard-working-F.S.-ACC-INDEF
'I thought the student was hard-working'

Al-Shamrani develops an analysis accounting for the inflectional properties in such sentences. Building on his analysis of the internal structure of the verbless sentence in (39) above, Al-Shamrani (p. 228) proposes the following representation for (60):

(61)



Recall that the subject NP raises to spec 'agrp', and the adjective raises to the head 'agr' to receive φ-features (see, (39), above). Based on (61), Al-Shamrani (p. 229) claims that the

accusative Case on the subject noun and the predicate adjective is assigned by the verb *ðanan* 'thought'. The accusative Case "percolates" through 'agrp' to the head 'agr' (where the adjective has moved); at the same time, the Case "spreads" into the spec of 'agrp' (to which the subject NP has already moved). The *percolation* notion of Case through 'agrp', as well as indefiniteness on the adjective, need more clarification.

By way of conclusion, the analyses reviewed in this section do not seem to meet the criteria laid out at the beginning of the section circumscribing what a good theory of Arabic adjectives must address. While some of these analyses have attempted to explain how agreement in φ-features holds between the noun and its relevant adjective(s), the syntactic mechanism(s) exploited to achieve this type of agreement need(s) more clarification. Similarly, the variation in Case predicative adjectives show in the presence of Case assigners (e.g., *kaana* 'was' or *ʔinna* 'that') is not satisfactorily addressed. Also, the asymmetry in definiteness between the subject NP and the predicate adjective in Zero Copula constructions receives but scant attention; suffice to say an explanation remains outstanding.

The next section reviews some recent Agree-based analyses proposed for Arabic APs. The section begins by discussing theories proposed for Zero Copula (or verbless) sentences, which (in some analyses) are also extended to Arabic SCs.

6. *Agree-Based analyses of Arabic APs*

6.1 Baker (2003, 2008)

Based on their semantic and syntactic properties, Baker (2003) develops a theory of the lexical categories of verbs, nouns, and adjectives. For Baker, adjectives are different from verbs in that they do not license a specifier; also, adjectives are different from nouns in that they do not have a referential index (i.e., they do not carry φ-features of their own.[84])

In standard generative theory, verbs, nouns, and adjectives can assign theta roles to a subject in the spec of their maximal projections (Stowell, 1981). Bowers (1993) rejects this notion arguing that such categories cannot independently assign a theta role to their spec position; instead, a functional head called Predication[85] (Pred) supports these categories, enabling theta-assignment to succeed.

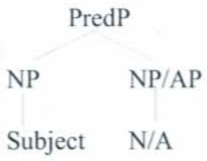
Following Bowers (1993), Baker (2003) proposes a unified syntactic structure for both NPs and APs. In particular, predicative nouns and adjectives are headed by a null functional category: Predicate Phrase (PredP). The subject in a predicative noun (or adjective) does not originate inside the NP, nor does it originate inside the AP; it originates, instead, in the specifier position of PredP, as the following representation

84 Specifically, Baker argues that having referential index in nouns is a one categorical property which distinguishes them from adjectives: "with that referential index come intrinsic φ-features" (2008, p. 50).

85 Notice that the functional Pred behaves like a light *v* (in Chomsky's 1995 work) in that it licenses an external argument.

shows:

(62)



According to Baker, the Pred head is not solely responsible for theta-marking the subject of a nominal or adjectival predicate; rather, it is a combination of an NP or AP plus Pred which creates a category capable of theta-marking a subject.[86]

Building on his (2003) theory, Baker (2008) develops a theory of *agreement*, proposing an adjustment to Chomsky's Probe-Goal system whereby "agreement-bearing heads must be able to search upward through the syntactic structure to find something to agree with as well as downward" (p. 12).

In his survey of different languages of the world, Baker argues that although verbs, nouns, and adjectives bear agreement inflection, they differ in terms of how many features of agreement each lexical category can bear. Specifically, verbs show agreement with their subjects in [Person], [Number], and [Gender]; adjectives agree with other nominals in [Number] and [Gender], but not in [Person] (particularly in first and second person

86 Baker states that the exact theta-role assigned to the subject does not depend on the meaning of the Pred head, but rather on the lexical meaning of the adjective or noun.

agreement forms); conversely, nouns do not seem to agree with any other noun as they bear referential indices of their own (i.e., φ-features).

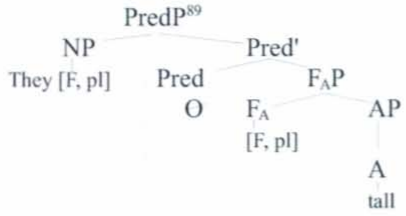
Baker (2008) assumes that agreement on a lexical category (e.g., NP, AP, etc.) is obtained by a functional category which *immediately* dominates that lexical category (i.e., F_A and F_N in (63) below). The head of such a functional category matches the lexical category in "gross categorical features" (p. 34). In other words, agreement features (i.e., φ-features) do not appear on the lexical category itself, but rather on the functional category.[87]

Baker then introduces a unified theory of subject-verb agreement as well as noun-adjective concord, and proposes the verbal, adjectival, and nominal predication structures in (63). (The verbal predication structure is not included):

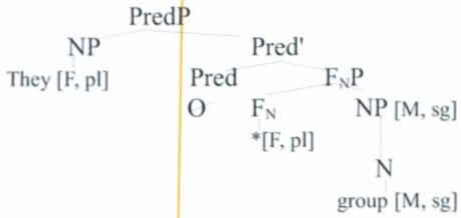
87 In Baker's (2003) original theory, the F_AP as well as F_NP layers of functional structure were not included in the structure of verbal, nominal, or adjectival predications.

(63)

Adjectival predicate[88]



Nominal predicate



(Baker, 2008, p. 49)

N is the only category that has intrinsic φ-features; thus, the complement of F_N in (63) has its own φ-features. The complement of F_A, on the other hand, does not have φ-features, simply because it is an adjective.

With respect to what the exact nature of the functional categories of F_A and F_N might be, Baker speculates that F_N might be a Number head (in the sense of Ritter, 1991) whereas the functional head F_A has no analogous functional category in the literature. Baker suggests, following Marantz (2000) (as cited in Baker, 2008), that these functional categories might be regarded as little n and little a heads which take bare ROOT complements.[90] Baker further suggests that not all NPs and APs are headed by the

88 As will be shown in chapter 4, I develop a similar structure for Arabic predicative adjectives; however, the structure I am proposing is based on different conceptual and theoretical grounds.

89 Notice that, according to Baker, PredPs in both nominal and adjectival predicates in (63) can further be headed by verbal functional heads; and that such verbal heads are not relevant to the process of agreement in his theory. Furthermore, Baker claims PredP can be a matrix clause in both Arabic and Hebrew sentences.

90 However, unlike Marantz, Baker argues that these complements are syntactically specified categories.

categories F_NP and F_AP (respectively). For example, there are adjectives in Swahili which do not show agreement; therefore, such adjectives are not headed by the functional category F_AP. In this respect, any agreement manifested on an adjective is not a property of that adjective, but rather of a functional head that dominates the AP.

Baker aims at eliminating the idea that probes are "arbitrarily specified as having certain feature slots as opposed to others" (p. 44). Thus, Baker proposes that "all Fs are potential agreers and they agree with whatever features they can find in their environment according to structural principles" (p. 44).

He further argues that agreement on adjectives is defective (**incomplete**) because the *[Person]* feature does not show up on adjectives. Being incomplete, the adjectival agreement with an NP does not value the Case feature on that NP; likewise, it does not prevent any other head from agreeing with that NP (i.e., the NP remains active for further agreement). Thus for Baker, adjectival agreement is a "degenerate case" (Baker, 2008, p. 174).

In a revision of Chomsky's (2000-2001) Probe-Goal theory, Baker proposes certain syntactic conditions on agreement ((64), (65), (67), and (68) below). (64) shows Baker's version of the c-command condition (p. 45):

(64) F agrees with XP, XP is a maximal projection, only if:

a. F c-commands XP or XP c-commands F

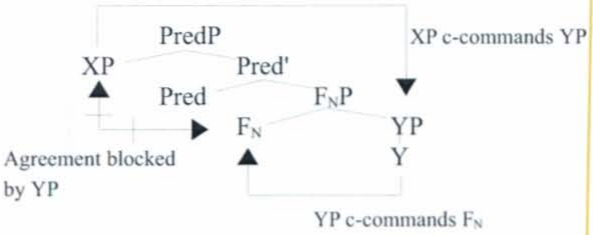
In Chomsky's system, agreement occurs between the Probe F and the Goal XP, meaning that the direction of c-command proceeds from F to XP. However, according to the revised version of the c-command condition in (64), it is sufficient for XP to c-command F in order for agreement to occur between these syntactic elements (i.e., the direction of c-command changes from XP to F). Likewise, Baker revises the *Intervention Condition* (p. 47) as in (65):

(65) F agrees with XP only if:

b. There is no YP such that YP comes between XP and F and YP has phi-features

Baker defines the notion "comes between" as follows: "A comes between B and C if and only if either (i) B c-commands A and A c-commands C, or (ii) C c-commands A and A c-commands B" (p. 47). To better understand this, let us assume that A is actually YP (i.e., NP 'group' in (63)); and, B is actually XP (i.e., the subject NP 'they' in (63)); and, C equals the head F_N as illustrated in (66):

(66)



According to Baker, the intervention condition in (65) shows the difference between the predicative nouns and adjectives in (63). Specifically, the noun 'group' (which has φ-features) c-commands the agreeing head F_N, and is also c-commanded by the subject 'they'. According to the intervention condition, the noun 'group' is an intervener which blocks agreement between the head F_N and the subject 'they'.[91]

The complement of the functional head F_A (i.e., AP 'tall') in (63), on the other hand, does not have φ-features; therefore, it is not an intervener, and agreement between the subject 'they' and the head F_A is not blocked.

Baker also proposes the phase condition in (67), and the activity condition in (68) (p. 48):

(67) **c**. F and XP are contained in all the same phases (the phase condition)

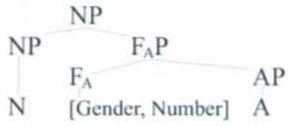
91 Baker does not exclude the idea that the head F_N can agree with its NP complement; this way, the features of [Number] and [Gender], which are associated with the NP, can be manifested on the head F_N.

(68) **d**. XP is made active for agreement by having an unchecked Case feature (the activity condition)

6.1.1. Attributive Adjectives

According to Baker's theory, attributive adjectives are simply adjoined to the phrase they modify, as in (69) (modified from Baker, 2008, p. 50):

(69)



Attributive adjectives, unlike predicative adjectives, lack a Pred head as can be seen in (69). The complement of F_A (i.e., A) in (69) does not bear φ-features, and thus, by virtue of the intervention condition (65), is not an intervener, and agreement between F_A and the NP (in spec NP) which c-commands F_A, takes place.[92]

Adjectives do not assign Case to NPs, but they agree with NPs in Case (cf. Al-Shamrani, 1994; Fassi-Fehri, 1993, and traditional grammarians who claim that adjectives *do* assign Cases to NPs). Thus, for Baker, when T agrees with an NP, nominative Case is assigned

92 According to Baker, agreement with the subject could appear on Pred. However, Baker rejects this idea as it would not provide unified analysis for both predicative and attributive adjectives (which lack a Pred head in its structure).

to the NP (and becomes a feature of it), a process which Baker calls: "Case assignment." When the NP agrees with the head F_A, the already inherited feature on the NP becomes a feature of the F_AP as well is referred to as "Case concord." In this respect, the modified NP (in attributive adjectives) determines the Case of the adjoined adjective.[93]

6.1.2. Issues with Baker's theory

Baker's theory in its entirety constitutes a positive (and perhaps unique) attempt towards characterizing aspects of agreement in adjectival constructions using Chomsky's Probe-Goal version of Agree. However, there remains cause for speculation about particular aspects of the theory.

For instance, the exact nature of the functional heads F_A and F_N as well as the roles they play in the agreement process is left unclear. In other words, as brought about in the discussion above, Baker *himself* is not exactly sure as to the precise nature of this layer of functional category. Minimally, Baker assumes these functional projections to provide a position where agreement morphemes can be housed.

As previously mentioned, Baker argues that agreement succeeds between F_A and the

93 In chapter 4, I will argue, contra Baker, that it is not the NP that determines the Case feature of the attributive A; instead, I will argue that the Case features on both N and the attributive A are assigned/valued by a single Probe.

subject NP in adjectival predicate constructions, and that Case feature (already associated with the subject NP) becomes a feature of the F_AP as well through Case concord. This would explain examples of Case concord which manifest between a noun and its attributive adjective. Nevertheless, considering Baker's argument that F_A is not a Case assigner, the predicative adjective construction in Arabic in particular seems to pose a problem for Baker's Case concord account as the subject NP, when preceded by a Case assigner, bears a different Case form from that of the adjective; consider examples (70) and (71):

(70) ʔinna ar-rajul-a mariiḍ-u-n
Comp DEF-man-ACC sick(M.S.)-NOM-INDEF
'(it is confirmed) that the man is sick'

(71) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick(M.S.)-ACC-INDEF
'the man was sick'

It seems that Baker's theory implicitly advocates two different processes of agreement: (a) Case agreement, and (b) φ-agreement. In other words, it seems that the basic motivation for the functional category FP is to explain agreement in φ-features *alone* (i.e., agreement appears on this category, but not on lexical categories). This amounts to saying that another category must be responsible for Case valuation.

If possible, some essential modifications to Chomsky's Probe-Goal theory must be proposed. In other words, the need to receive Case (for nouns and adjectives), in addition to φ-features (especially for adjectives), would be the main motivation for initiating the probe process.[94]

Finally, a remark concerning Baker's claim that adjectives come from the lexicon with *no φ-features* (see, fn. 84 on page 126) is in order. The essence of this claim is that adjectives have no lexical φ-features, but receive these features in the syntax, from a nominal source. Under this view, it could be inferred that agreement between nouns and adjectives (in Arabic) is achieved when the latter *somehow* receive φ-features from the former.

Assuming that adjectives lack φ-features seems to be an extreme way of expressing the fact that adjectives agree with nouns in φ-features, but not visa versa. In fact, Baker's assumption can be challenged on a number of empirical grounds. Thus far, the Arabic data shows that adjectives (i.e., both predicative and attributive) exhibit agreement with the nouns they apply to in [Number] and [Gender]. However, as will be demonstrated (in chapter 6), adjectives in other constructions (i.e., Adjectival Construct) exhibit partial agreement with their nouns; that is, in the feature [Gender] only. Moreover, the data shows another type of adjective which exhibits no such agreement with the noun it

94 Nevertheless, I will show later that the positive outcomes of upward probing, in Baker's sense, can be achieved by a process I will call Scan, which will be introduced and discussed in details in chapter 4.

applies to; that is, the adjectives have different φ-features from the nouns they apply to. These types of adjective seem to contradict Baker's conclusion that adjectives come from the lexicon with no φ-features of their own.

While in this thesis, Baker's assumption that adjectives have no intrinsic φ-features will be maintained, a distinction will be made between lacking φ-features (as in Baker's assumption), and having empty slots for the φ-features [Number] and [Gender].[95] These slots, which are empty of values, nevertheless allow the φ-features to receive values from other sources (e.g., nouns or pronouns). The distinction between lacking φ-features and lacking φ-feature values is conceptually advantageous, as will become evident when we consider Arabic APs in various constructions.

6.2 Al-Horais (2007)

Based on Chomsky's (2005) Feature Inheritance theory, Al-Horais (2007) develops an analysis of SCs in Arabic. Consider the following example from Al-Horais (p. 101):

(72)	ʕadad-tu	[Mariyam-a	ðakiy-at-an]
	Considered-I	Mariyam-ACC	smart-F.S.-ACC
	'I considered Mariyam smart'		

95 This second idea will be elaborated in chapter 4.

As we have seen in the previous section, the bracketed elements constitute a SC structure. Notice that there is no *overt* Case assigner within this SC, yet both the subject and predicate bear accusative Case. Al-Horais adopts Hiraiwa's (2001) analysis of multiple agreement operation in Japanese. The latter argues for a syntactic operation he calls MULTIPLE AGREE, whereby a single Probe can simultaneously Agree with more than one Goal. According to Hiraiwa, a Probe bears a [+multiple] feature which allows it to probe its c-command domain for Goals, until no more goals can be found.

Specifically, multiple nominative DPs in a Raising-to-Subject construction in Japanese can appear in infinitival embedded clauses as in (73) (p. 76):

(73) John-ga [yosouijouni nihonjin-ga eigo-ga hido-ku kanji-ta
John-NOM than-expected the-Japanese-NOM English-NOM bad-INF think-PST
'It seemed to John that the Japanese are worse at speaking English than he had expected'

Under Hiraiwa's MULTIPLE AGREE the Case values on the embedded nominative DPs are assigned/valued by virtue of a multiple Agree relation with the matrix T, as schematized in (74):

(74) T-seem $DP_{1\varphi}$ (Nom/Dat) [Adv. $DP_{2\varphi}$ (Nom) $DP_{3\varphi}$ (Nom) ...V-INF] (p. 77)

MULTIPLE AGREE (T_{φ}, $DP_{1\varphi}$, $DP_{2\varphi}$, $DP_{3\varphi}$)

Under Chomsky's (2000, 2001) version of Agree, the unvalued Case feature on DP_3 cannot be assigned/valued due to the Defective Intervention Constraint (DIC); that is, the inactive goal DP_2, which has already entered into an Agree relation with the Probe T, intervenes between T and DP_3. This problem can be resolved by Hiraiwa's Multiple Agree, according to which, the Probe T bears a [+multiple] features. Thus for the purpose of valuing its unvalued φ-features, the Probe T probes all three DPs and enters into an Agree relation with these DPs "derivationally simultaneously[96] as a single syntactic operation" (p. 77). For Hiraiwa, the intervening goal (i.e., DP_2) is still active at the point where the Probe T enters into Agree with the goals; therefore, the DIC is not triggered, and the derivation converges.

Based on this, Al-Horais then explains how the subject and the predicate in the embedded clause in example (72) check their accusative Cases, and at the same time maintain agreement in φ-features.

Al-Horais proposes that there is a TP in the SC *[Mariyam-a ðakiy-at-an]*, which he calls T_{SC}. The head of T_{SC} is unvalued, thus it is an anaphoric T which needs support from its antecedent T in the main clause (by being c-commanded by the matrix T head).

According to Al-Horais, the agreement between the subject and the predicate follows

96 Hiraiwa states that a DIC is triggered in cases where the Probe that probes DP_2 and the one that probes the other DPs are "derivationally distinct" (p. 71).

according to Al-Horais, as T already has its own unvalued ϕ-features.

6.3 Musabhien (2008)

Musabhien (2008) presents an Agree-based analysis of how complements in nominal clauses get nominative Case when they are not preceded by an overt Case assigner, as in example (76):

(76) ar-rajul-u mariiḍ-u-n
DEF-man-NOM sick(M.S.)-NOM-INDEF
'the man is sick'

Building on Chomsky's (2005) Agree theory, Musabhien argues that Zero Copula sentences on MSA are **full CPs**, and that Case on the subject *ar-rajul* 'DEF-man' in example (76) is valued under an Agree relation with C, and the Case on the complement *mariiḍ* 'sick(M.S.)' is valued by another functional head.

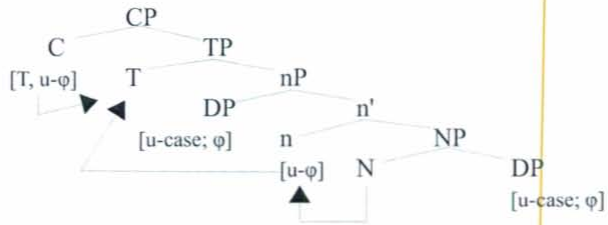
For Musabhien, Zero Copula (verbless) sentences such as (76) contain a functional projection analogous to vP, which he calls nP. The head of this functional projection (i.e., *n*) is responsible for the Case value on the complement in such Zero Copula structures. More specifically, Musabhien argues that nominative Case on the subject *ar-rajul* 'DEF-

man' is assigned by a null T which, according to Chomsky's Phase Theory (2005), inherits its features from C.

Once T inherits tense and ϕ-features from C, they both form a complex which functions as a single probe (C-T). Thus valuation of Case on the subject *ar-rajul* 'DEF-man' (nominative) is the result of the Agree relation between the C-T complex and the subject.

As for how Case on the complement is valued, following Carstens' (2000) analysis of the DP structure, Musabhien argues that a Zero Copula sentence such as (76) has a functional projection (i.e., nP). The head of the nP projection is responsible for valuing the Case feature on its nominal complement: The head *n* assigns nominative Case to the complement and takes an external THEME argument. Musabhien (p. 143) thus proposes the following structure for Zero Copula sentences:

(77)



The derivation proceeds as follows. The DP complement merges with the pronominal copula N, forming the NP core. The NP is then combined with the functional head *n* and

n' is combined with the external argument (subject), forming nP. The projection nP is merged with T and T is then selected by C in finite sentences. Finally, in line with Chomsky (2005), T inherits its features from C.

Assuming the analogy between *v*P and *n*P, Musabhien argues that the pronominal copula N moves to the head *n*. Having unvalued ϕ-features, the head *n* probes and initiates an Agree relation with the closest active goal which it c-commands. The probe *n* locates and agrees with the DP complement; as a result of this, DP gets its Case valued (i.e., nominative). Musabhien further argues that *n* moves to T which has already inherited its ϕ-features from C. The complex probe C-T agrees with the subject in spec nP, and the Case of the subject is valued nominative.

Musabhien's analysis does not provide an account of the agreement (in φ-features) between the noun and the adjective in example (76) (i.e., it does not state at which point agreement occurs), nor does it explain the disagreement in definiteness between these two elements.

6.3.1. Verbal sentences

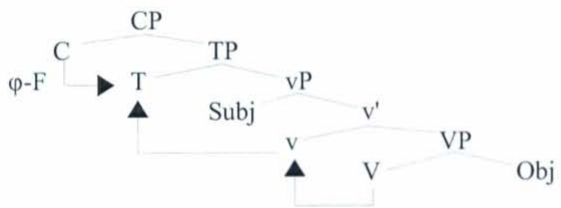
In his analysis of verbal sentences in SA, Musabhien proposes that preverbal nouns in SVO constructions are not subjects, but rather topics. These topics are raised from the

spec of *v*P to the spec position of a TopP (located higher than TP but lower than CP).

Building on Rizzi's (1997) notion of the 'left periphery', and Chomsky's (2005) notion of FI, Musabhien claims that features on the phasal head C can split. That is, the unvalued φ-features on C are transferred to T, but the EF (Edge Feature) is transferred to the head of TopP (Top).

Musabhien begins by discussing the derivation of VSO word order in MSA. For him, in VSO constructions, the verb raises to *v* and then to T. The subject, however, remains in spec *v*P, for the phasal head C does not have an EF, as in (78) (p. 205):

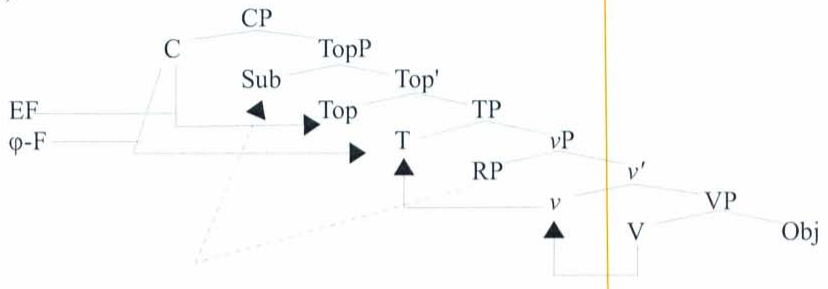
(78)



Assuming (78), a predicative adjective in the *object* position must receive accusative Case from the Probe *v*-V.

As for the SVO word order, Musabhien argues that the movement of the verb resembles that in VSO (i.e., V raises to *v* and then to T). The subject, on the other hand, raises from spec *v*P to spec TopP, as shown in (79) (p. 206):

(79)



According to Musabhien, due to feature splitting, movement of the subject to spec TopP is triggered by the EF the head Top inherits from C; in the same way, φ-features on C are transferred to T. Agree, then, takes place between T and the subject (i.e., unvalued φ-features receive valuation). Following Pesetsky (1998), Musabhien argues that when the subject raises, a resumptive pronoun (RP) is left behind as in (79). The topic, then, becomes a fronted copy of the noun in spec *v*P.

As for the nominative Case value on the subject, Musabhien claims (p. 194-195) that the phasal head C retains its valued (Lexical) [Case] feature, and when the subject raises to spec TopP, C *itself* probes it and values its unvalued [Case] feature.

Musabhien explains that the head C can value the [*u*Case] feature on the raised subject since it is an active goal (i.e., bears an [*u*Case] feature), meaning it is "fresh in the sense that it does not have a valued Case feature. For that reason, the fronted copy counts as an

active goal with which C agrees and to which a Lexical Case is assigned". (p. 129)

Thus, it seems that T enters into Agree with the subject in spec *v*P for the purpose of valuing its (inherited) unvalued φ-features only. In this respect, Musabhien seems to advocate for a disassociation of Case and φ-features.

If the RP in spec *v*P bears an unvalued Case feature, Musabhien's analysis faces a challenge: The RP in spec *v*P will not receive valuation from T (following his assumption that T inherits φ-feature from C, but nothing else); in other words, T cannot value the RP's Case, and the derivation must crash. Furthermore, the analysis does not explain how the symmetry in φ-features between the subject noun and the predicate adjective is obtained, especially if we consider that each element is probed separately.

6.4 Al-Balushi (2011)

Following the consensus in traditional Arabic literature, Al-Balushi (2011) argues that verbs, like nominal and adjectival DPs, are licensed by a Verbal Case (VC) feature, which is also reflected in the verbal morphology. This feature (i.e., VC), according to Al-Balushi, is responsible for licensing structural Cases in various SA constructions.

Following Chomsky's (2005) theory of Agree, Al-Balushi argues that VC is an unvalued

[VC] feature borne by I^0 (or T) and v^{*0}; such a feature may receive valuation through an Agree relation with the verbal particle Fin^0 (in the sense of Rizzi (1997)), which bears a valued [VC] feature.[97]

Under Agree,[98] then, the valued [VC] feature on Fin^0 values the unvalued [VC] feature on I^0, which in turn values the Case feature on the subject (nominative). Likewise, Fin^0 values the unvalued [VC] feature on v^{*0}, which in turn values Case on the object (accusative). This way, the structural Cases on both the subject and the object become licensed.[99] Thus, licensing of DPs in verbal sentences is dependent on licensing of verbs, meaning that verbs are not able to license DPs unless they are licensed themselves.

Based on the argument that the existence of a licensed verb reflects the existence of a VC, Al-Balushi proposes that the reason verbs are not available in verbless sentences in SA stems from the fact that such verbs cannot be licensed; consequently, structural Case in verbless sentences cannot be licensed either (i.e., the absence of structural Case in such sentences is a reflection of the absence of the VC).

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97 However, as will be shown shortly, Al-Balushi proposes another variety of Fin^0 which lacks the [VC] feature (i.e., in verbless sentences).

98 Unlike Chomsky's (2005) version of Agree, Al-Balushi states that the concept of 'Agree' in his system does not exclusively refer to φ-features (alone). In fact, he states that " 'Agree' for me is a relation or link between a probe and a goal which results in valuing virtually any feature on the probe and the goal, not just φ-features; these include T, [Mood], and [VC]" (p. 24). Thus, contra Chomsky (2001) and Soltan (2007), structural Case is not valued as a reflex of φ-feature agreement on I and/or *v*. Furthermore, Al-Balushi states that his conclusion contradicts Pesetsky & Torrego's (2001, 2004) finding that Case is valued as a reflection of agreement with an unvalued T on D.

99 It seems that neither I^0 nor v^* can value structural Case on arguments unless they receive valuation for their unvalued [VC] features.

Al-Balushi, then, argues that the nominative Case values on both the noun[100] (topic) and the predicative adjective in the following example are *default* nominative Cases, which are realized at PF:

(80)	ar-rajul-u	mariiḍ-u-n
	DEF-man-NOM	sick(M.S.)-NOM-INDEF
	'the man is sick'	

Being a topic, the noun *ar-rajul* originates in the left-periphery (i.e., in spec TopP). According to Al-Balushi, the default nominative Case indicates that topics and predicates in verbless sentences are "not in the scope of a case assigner" (p. 106). Being out of reach of Case assigners, the default nominative Case is triggered.

Furthermore, Al-Balushi adds that verbless and copular sentences must be analyzed in terms of SCs. Thus, following Bowers (1993) and others, he proposes that the SC has a Pred head, which controls the predicational relation between the argument and the predicate, and that SC is headed by the maximal projection PredP.[101]

According to Al-Balushi, verbless sentences denote T, [Mood], and agreement (see, also Fassi-Fehri, 1993); in fact, he concludes that verbless sentences have a φ-complete I^0. This φ-complete I^0 functions as a licensor for a *pro* element in spec PredP. This *pro* is in a

100 Al-Balushi analyzes the noun *ar-rajul* 'def-man' in (80) as a topic, not a subject (cf. Benmamoun, 2000, 2008; Fassi-Fehri, 1993; and Musabhien, 2008, who analyze the noun *r-rajul* as a subject).

101 Under Al-Balushi's analysis, the Pred head is not responsible for the Case morphology on the predicate.

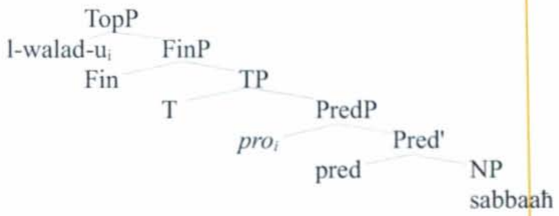
thematic position, and being there, *pro* licenses the topic which is "a non-argumental element licensed in the A-bar domain through coindexation with *pro*" (p. 113).

Moreover, Al-Balushi concludes that verbless sentences are finite clauses, and that consequently a FinP is part of their structure. The head Fin (of this FinP) lacks the categorial [V] feature as well as the [VC] feature. It also lacks a *valued* [T] feature. The PredP does not have the categorial feature [V]; likewise, T does not have the same feature [V], nor does it have the [VC] feature.

To illustrate how the derivation of verbless sentences proceeds, Al-Balushi (p. 151) proposes the representation in (82), for the following example:

(81) l-walad-u sabbaaḥ-un (p. 150)
DEF-boy-NOM swimmer-NOM
'the boy is a swimmer'

(82)



Based on the discussion above, there is only one feature (i.e., [T] on Fin^0) which needs to

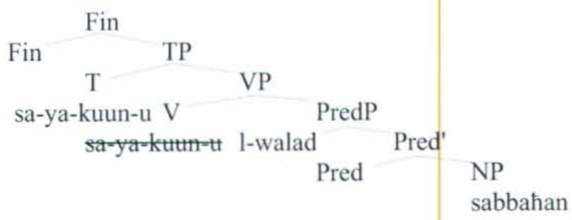
be valued; thus, under Agree, the relation between T and Fin^0 will result in the valuation of the feature [T] on Fin^0, and thus structural Case is not licensed in verbless sentences. In other words, due to absence of the [VC] feature in such sentences, the topic as well as the predicate observe the default nominative Case (at PF).

Consider the following copular sentence from Al-Balushi (p. 146):

(83)	sa-ya-kuun-u	al-walad-u	sabbaah-an
	Fut-Impf-be.3SM-Ind[102]	DEF-boy-NOM	swimmer-ACC
	'the boy will be a swimmer'		

When a verbal copula is added to a verbless sentence, the predicate in that sentence bears accusative Case. For the copular sentence in (83), Al-Balushi proposes the following representation (p. 146):

(84)



According to Al-Balushi, the verb *sa-ya-kuun-u* has a valued categorial [V] feature,

102 The abbreviations Fut, ImpF, and Ind mean Future, Imperfective, and indicative, respectively.

which is transmitted to the VP. The VP, then, is selected by T^0 (T^0 has an unvalued [V] feature, unvalued [VC], and a valued [T] feature); thus, under Match, the unvalued [V] feature on T becomes valued by the valued [V] on VP.

The valued categorial [V] feature on T is transmitted to TP. TP, now, is selected by the version of Fin^0. (Fin^0 has an unvalued categorial [V] feature, valued [VC] feature,[103] and unvalued [T] feature). Under Agree, the unvalued features (i.e., [V] and [T] on Fin, and [VC] on T get valued). Having a valued [VC] feature, the subject in spec PredP enters into Agree with T^0; as a result, the [Case] feature on the subject is valued nominative.

Al-Balushi explains that the verb is not in the **scope** of the particle (Fin^0) which assigns the [VC] feature, and as such cannot receive [VC] specification. Instead, the default indicative morphology (m- verbal Case) is realized on the verb (at PF).

As for the accusative Case on the predicate, Al-Balushi claims that it is not structural, but rather an "idiosyncratic lexical case assigned by the copular verb, which is lexically specified as being able to assign lexical Acc case ([$case_{L(exical)}$]" (p. 147). He adds that this lexical Case has "no licensing value whatsoever" (p. 148).

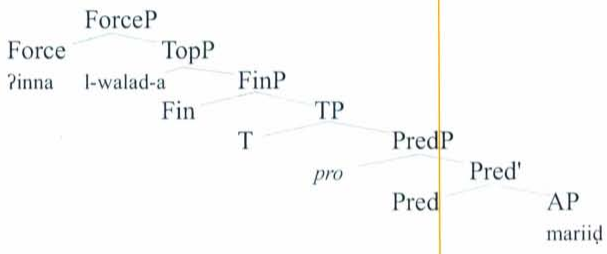
Al-Balushi (p. 154) proceeds to account for Case in verbless sentences with the complementizer *ʔinna* as in (85):

103 Recall that Fin^0 in verbless sentences lacks the feature [VC] altogether.

(85) ʔinna al-walad-a mariiḍ-u-n
Comp DEF-boy-ACC sick(M.S.)-NOM-INDEF
'(it is confirmed) that the boy is sick'

He proposes the following representation for example (85). In (86), the structure is headed by a ForceP (in the spirit of Rizzi, 1997), and *ʔinna* originates under the head Force:

(86)



According to Al-Balushi, PredP, which has no categorial [V] feature, is selected by T which also lacks this same feature as well as the [VC] feature. The projected TP is selected by Fin. The head Fin has no categorial [V] feature, and no [VC] feature, but does have an unvalued [T] feature. The Agree relation between T and Fin will value the [T] feature on Fin, but no abstract Case valuation is expected. Thus, structural Case is not licensed in such sentences.

As for the nominative Case value on the predicate, Al-Balushi argues that it is a default

Case value, as we have seen in verbless sentences. However, for the accusative Case on the topic, he proposes that *ʔinna* is one of the "(idiosyncratic) lexical case assigners which assign the feature [$case_{L(exical)}$]" (p. 156). On this view, the accusative Case on the topic is a lexical one.

As for the Case value on *pro*. Al-Balushi (p. 282-283) argues that the element *pro* does not receive Case values in verbless sentences.[104] He argues, however, that *pro* in Arabic SVO word orders receive a nominative Case value from the head I^0.

Al-Balushi's analysis raises some questions as far as the agreement phenomenon is concerned. Given the representation in (82), it is not obvious how φ-specification between the topic (in his sense) and an adjectival predicate (e.g., example (80) above) is obtained. In other words, how would the adjective *mariiḍ* 'sick(M.S.)' show agreement with the noun *r-rajul* 'def-man' of which it is predicated? As a matter of fact, nothing in Al-Balushi's system addresses this phenomenon, for which reason agreement (in φ-features) between a noun and an adjective remains unexplained.

Al-Balushi (p. 23-24) discusses the possibility that the unvalued [Case] features on the subject as well as the object can act as probes for the valued [VC] on I^0 and v^{*0}, respectively. Likewise, he states that due to the unvalued [VC] on I^0 and v^{*0}, they can

104 Likewise, Al-Balushi argues that *pro* in participial sentences does not receive Case values (see, chapter 7).

probe the goal Fin^0 (i.e., allowing upward probing to occur).

Given this, what prevents the DPs *al-walad* 'DEF-boy' and *sabbaaħ* 'swimmer' in (82) from probing downward and upward (respectively) for goals? On the same vein, what prevents the head T in (84), for example, from probing Fin^0 (upward probing) where it would receive valuation for its unvalued [VC] feature?

The mechanics of the *transmittance* notion in (84) need more clarification. That is, it is not obvious how it proceeds from the head to its maximal projection. Furthermore, it seems that Match (or Agree) proceeds between the head and its complement (e.g., between T and VP in (4)).

Also, (84) raises two further points. According to Al-Balushi, the head T^0 enters into Agree with the subject in spec PredP. Now, it is not clear why T would skip V and establish an Agree relation with the subject *l-walad* 'DEF-boy'. He also states that the verb is not in the scope of the particle Fin^0, and thus the verb cannot receive the [VC] feature. This seems strange considering that Fin^0 is able to reach the verb which it c-commands.

Summary

This section has reviewed some of the Agree-based analyses proposed for Arabic verbal

and verbless (or Zero Copula) constructions, some of which analyze verbless constructions as SCs. Like the non-Agree-based analyses reviewed in the last section, the discussion of each of the current analyses reveals certain limitations as far as the criteria set for what a good theory of Arabic adjectives should explain.

In the next chapter, a new approach to Agree, which will explain the aspects of Case and agreement (a)symmetries observed in Arabic APs, will be introduced. The approach will be presented as a direct implementation of the criteria a good theory of Arabic APs must meet.

Chapter 4

A new approach to the theory of Agree

1. Introduction

This chapter introduces a new, synthetic approach to the process of Agree. It is synthetic in the sense that it attempts to reconcile earlier works on Agree (particularly, Chomsky, 2000-2007; and P&T, 2001-2007) by adopting points of strength, and eliminating inconsistencies each approach shows when dealing with Arabic APs. This theory will maintain the close association between Case and agreement found in Chomsky's theory of Agree, while providing a more comprehensive model of how valuation of Case and agreement features function and interact in various Arabic AP constructions.

The chapter begins by presenting two operations which are at the heart of the proposed theory of Agree: (a) Scan and (b) Case-Reservation. The existence of these operations in the syntactic computational system, and their importance for the theory of Agree, will be demonstrated. It will be shown that these operations interact with other essential syntactic operations and principles, such as Full Interpretation, to help produce convergent derivations of Arabic APs through delaying and/or changing the stages at

which Spell-Out occurs.

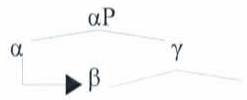
2. *Scan*

In this section, I introduce the operation Scan as one component of the larger Agree operation. In their definition of Agree, P&T (2007) state that a Probe "scans its c-command domain" for a Goal (p. 268[105].) From this definition, I borrow the term "scan" and argue for the existence of Scan as a syntactic operation in the grammar, which connects syntactic elements. A first attempt at defining the operation Scan is as follows:

(1)

A syntactic category α Scans another category β in the domain γ (i.e., the c-command domain of α) and "connects with it," as in (2):

(2)



According to (1), the operation Scan results in the connection of syntactic categories.

For P&T (2007) (see also Frampton & Gutmann, 2000; Frampton et al., 2000), scanning

105 P&T's definition has been discussed in chapter 2.

is a feature-driven operation. That is to say, it connects two syntactic elements driven by the features borne on the linked elements. The Scan operation proposed here is not driven by features.

Scan is an operation which can initially be understood as a preliminary step to (or precursor of) valuation, in the sense of Chomsky (2000). In Chomsky's characterization of the operation Agree, it consists of two parts: Probing and valuation. Probing begins with a Probe searching for a Goal (i.e., the *probing* part), and once a Goal is found, valuation then follows (i.e., the *valuation* part).

In this respect, Scan is similar to the *probing* part in Chomsky's Probe-Goal relation of Agree; however, I will argue that despite this superficial similarity, Scan and probing are two conceptually distinct syntactic processes, and that one of them actually constitutes part of the other.

In my analysis, the operation Agree is composed of two processes: (a) Scan and (b) valuation. Scan *itself* seems to consist of two sub-operations: *Probing*, and *linking* (or the establishment of links, also "connecting"). The sub-operation *probing* here is different from that of Chomsky. That is, *probing* in Chomsky's sense starts from elements which bear unvalued features, whereas *probing* in the proposed sense does not necessarily start from such elements. Therefore, when Scan operates, a syntactic element (i.e., Scanner) locates/probes another element, and a link is established between the Scanner and the

scanned item.

As for when Scan is able to operate, I claim that it operates as soon as a syntactic element (Scanner) enters the derivation. Even though I am following the premises of Chomsky's Probe-Goal theory, I diverge from it in various respects. First, the order in which Scan operates is different from Chomsky's characterization of the Probe-Goal relationship: According to Chomsky, **no** operation should occur in a derivation prior to the introduction of the phase head; thus, contra Chomsky, I will assume that Scan operates even before the phase head enters the derivation.[106]

Scan, then, is concurrent with the operation Merge (both Internal and External); in this respect, with Scan the implication is that once a lexical item is merged, it immediately becomes cognizant of its syntactic environment. A similar notion of structural cognizance has been suggested in Chomsky's (2000, 2001) works, but for *unvalued* features,[107] which seek valuation. Nevertheless, I diverge from Chomsky and claim that not only items with unvalued features, but also **all** lexical items (including those with valued features) are potential Scanners (recall that Scan is not driven by features).

Having established a correlation between Scan and Merge, I will follow Chomsky in

106 However, an exception to this point will be forced by the data discussed in chapter 5.

107 P&T (2006) argue for a similar notion, and propose the *Vehicle Requirement on Merge* (VRM) (p. 25):
(i) If α and β merge, some feature F of α must probe F on β.
VRM entails that once two syntactic elements are merged, Merge involves Probe-Goal interactions which are triggered by unvalued features.

assuming that the operation Merge (both Internal and External) is "free" of charge.[108] I further posit that, like Merge, the operation Scan comes for free.

Let us now consider: What does Scan do besides connecting lexical items? What are the consequences of the operation Scan?

Thus far, I have assumed that Scan connects lexical items by creating links among the scanned items. Next, I will show that the establishment of links allows the linked items to *share* properties (i.e., values of the features borne on these items). Thus, to refine (1), the operation Scan entails:

(3)

i. A syntactic category α SCANs another category β in the domain γ (i.e., the c-command domain of α) and connects with it via a shared link (where "connect" entails (ii)).
ii. Once connected, categories α and β form a single set of binary relations, and are able to share feature values.

Assuming (3), the claim is that by linking categories α and β in (2), Scan produces a single set of binary relations. Point (ii) states explicitly that they are feature values which are being **shared** between the syntactic categories, not the features themselves. Thus,

108 Note that according to Chomsky (1995), External Merge in a recursive system is "free of charge". Chomsky (2001) argues that, like External Merge, Internal Merge is also "free" (see, Soltan, 2006, for a different view on Internal Merge). Conversely, P&T (2006) state that neither type of Merge is free.

while categories α and β may bear different features, I will claim, based on the Arabic data, that the notion *features* in (ii) is limited to the φ- and definiteness features. For instance, in languages where verbs inflect for the [Gender] feature, a [Gender] feature on a noun cannot be shared with that verb; instead, it is the value (e.g., *feminine*) of the feature [Gender] on the noun which can be shared with the verb.

Constraining the operation this way means that, in order to share values, a lexical item must have a slot for a certain feature; additionally, this slot must be unfilled/empty (i.e., does not have a value for that feature). Chomsky (2000, 2001) states that lexical items have feature slots; some of these feature slots are filled with values, while others are not (i.e., empty of values). The unvalued feature(s) on a lexical item must be valued, meaning that they become available for agreement.

One positive consequence of this limitation stems from the fact that it avoids possible overlapping and/or discrepancy of values. In other words, it does not predict that a [Gender] feature with an empty slot (i.e., $[....]_{Gender}$) will receive a value from a [Number] feature, nor does it predict that a [Number] feature with a value will receive another value for the same feature.

By way of illustration, consider the representations in (4) for the Scan operation:[109]

109 The symbol F in (4) represents *feature*. The empty brackets (i.e., [...]) indicate that no values are available for those features.

(4)

The representation in (a) shows the status of syntactic elements α and β before Scan applies. As soon as the lexical item α is introduced into the derivation, it begins to Scan its c-command domain. As a result, the item β is scanned, and a link is established between α and β, represented by the subscripted brackets ($[...]_2$) in (b). Scan then forms a set of binary syntactic relations between α and β, and the empty feature slots on each item are now filled with the shared (corresponding) values (i.e., [*masculine, plural*]). As expected, a successful value-sharing would not have been possible without empty slots for the feature [Number] (in case of category α) and the feature [Gender] (in case of category β) in (4).

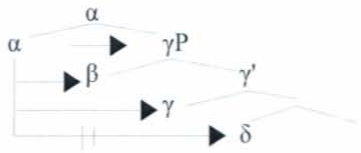
At this point in the discussion it is necessary to clarify precisely what I take the term "feature" to mean. I adopt Harley and Ritter's (H&R) (2002) feature geometric approach to morphological features. In H&R's system, if a node has no dependent, a default interpretation is obtained. Assuming this, I argue that value-sharing implies that features

are privative (i.e., reflect the presence or absence of a feature slot). However, I will limit this to definiteness; specifically, I claim that if a D head bears no slot (for definiteness), then the morphological outcome of D is going to be indefinite.

Scan, as illustrated in (4), should not be seen as a different label of feature-valuation in Chomsky's sense; rather, it should be understood as a distinct, bidirectional syntactic operation which results in value-sharing, not feature-valuation. For one thing, unlike feature-valuation, Scan does not require the existence of a Probe (with an unvalued set of φ-features) in order for value-sharing to occur. In fact, Scan allows *any* two elements to share values, provided that at least one of these syntactic elements carries an empty slot for a given feature, and that the other element carries a value for that feature. Moreover, in some cases, a scanner may become a Probe, as will be discussed later.

In order to operate efficiently, another constraint on Scan should be imposed. Specifically, I will argue that the searching ability and scope of a scanner (which could be a head or category) is not without limits. Under the PIC, I will claim that a scanner can have access to the *edge* of a phase in its domain (i.e., β and γ of the phase γP in (5)), but nothing further:

(5)



In addition, I will claim that Scan can operate locally (i.e., between a head and its complement); for example, between the head α and its complement[110] γP in (5). In this respect, a scanner may scan more than one syntactic item in its domain, establishing one set of links with these items, meaning that a link has been established with each item, and each link constitutes a separate binary syntactic relation.[111]

Furthermore, I will show that Scan can operate cyclically in that a scanner can *itself* be scanned by a higher scanner, thus creating a link (which contains another link) between the scanner and the scanned categories:

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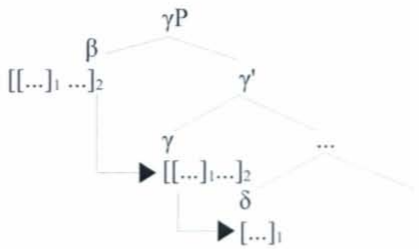
110 Note that (5) shows a resemblance between the searching scope of Scan and "government" (in Chomsky, 1986a), as far as the relation between the governor (or Scan) and the governee (or the scanned item) (see, also Koopman, 2006, in section 2.2 in chapter 2).

111 A conceptual parallel to the establishment of a *single* link between the scanner and all scanned items is found in Bošković (1999). Following Chomsky's (1995) Attract theory, Bošković analyzes focus-motivated movement of multiple *wh*-phrases in Bulgarian and Serbo-Croatian. Shifting from Chomsky's conjecture that movement is motivated by heads with *strong* features, Bošković (p. 169) argues that *wh*-phrases (themselves) in both Bulgarian and Serbo-Croatian bear strong focus features, which must be checked. In addition, there is a single "focus attractor" (termed "Attract-all-F element"), with a *weak* focus feature, which attracts all *wh*-phrases regardless of their order. Consider the following examples from Serbo-Croatian and Bulgarian, respectively:

(i) ko šta kupuje
who what buys
'who buys what' (p. 162)

(ii) koj kogo kak e tselunal
who whom how is kissed
'who kissed whom how' (p. 165)

(6)



In (6), the syntactic element γ scans δ in its c-command domain, and a link ($[...]_1$) is established between the two elements. Next, a higher head β scans γ, and establishes a link with it: $[...]_2$. But, since γ is already part of a link ($[...]_1$), this link will become part of the newly established link: $[[...]_1 ...]_2$. Therefore, β becomes *indirectly* connected to δ through γ (i.e., through the link $[...]_1$ established between γ and δ).

Having introduced the first prime operation in my approach to Agree, I will proceed to introduce Case- Reservation as the second important operation of my theory.

3. Case-Reservation

The second main operation in my theory concerns agreement in Case. As the terminology indicates, Case-Reservation (Case-R) is an operation which entails that the value of a Case feature on a nominal and/or adjectival element is *reserved* for that element; thus, no change in the Case value for that element is expected to occur even if

that element is to later be probed for valuation by a different Probe.

To flesh this idea out, a typical Agree relation will either result in a successful or failed relationship between a Probe and its Goal; specifically, a Probe either receives valuation for its unvalued φ-features, and its nominal (or adjectival) goal receives valuation for its unvalued Case feature, or it does not.

I further argue that under certain conditions, the Agree process results in a third option (i.e., between total success and failure) which arises with Arabic adjectival predicates. Only with respect to the third option will Case-R intervene to help save the derivation from a possible crash.

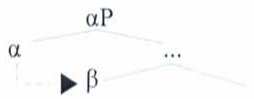
Therefore, once Agree occurs, Case-R requires that a reserved Case value on a nominal (or adjectival) not be *completely* deleted from the narrow syntax; that is, it remains partially visible, but unchangeable (thus allowing the bearing element to take part in a further Agree relation, if necessary). Initially, this suggests that a change may occur at the point where Spell-Out conventionally applies in order to avoid a derivational crash. In other words, if Spell-Out is to occur at the phasal level αP, we would expect Spell-Out, under Case-R, to be delayed until a higher *x*P phase.[112]

112 However, another reason, other than Case-R, for the delay of Spell-Out is considered in section 4. of this chapter.

Case-R requires a refinement to Chomsky's (2000) Defective Intervention Constraint. Specifically, under Case-R, a Goal may participate in more than one Agree relation, without affecting the Case value drawn from a previous Agree relation. In this respect, movement of a Goal (with a reserved Case value) becomes possible, an unconventional step in Chomsky's (2000) sense.

Together, the operations of Scan and Case-R interact to produce a successful Agree relationship. By way of illustration, let us consider the following diagram:

(7)



According to Scan, once α enters the derivation, it begins to Scan its c-command domain, and establishes a link with β. If α is a Probe and β is a Goal for that Probe (as in a typical Probe-Goal relation), α values the uninterpretable Case ([*u*Case]) feature on β, and simultaneously has its unvalued φ-features ([*u*φ]) valued by β.

Under Chomsky's Agree theory, if β is unable to value the [*u*φ] features on α (i.e., β lacks one or more of its φ-features), the derivation should crash at LF; however, the current version of Agree differs from Chomsky's in that it presents cases where a Goal may bear φ-features, but these features have no values (i.e., come from the lexicon with no values),

thereby rendering the Goal unable to value the [*u*φ] features on the Probe α in (7) causing the derivation to crash.

Nevertheless, under my analysis, such a crash can be avoided by Scan and Case-R. In other words, under Case-R, the Case value on β in (7) is *reserved* by α; and together with Scan, the lifespan of a cycle is prolonged by delaying the point of Spell-Out, and instructing the computational system that if no further information/values (which should save the derivation) are found and shared with the Goal β (through links), then and only then will the derivation crash. In the next section, it will be argued that it is the Goal *itself* (an adjectival Goal) which triggers the delay in Spell-Out by changing the point at which it should apply.[113]

In the next section, I discuss how Scan and Case-R operations function in Arabic APs. I begin by considering adjectives in Zero Copula and Small Clauses constructions.

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113 The interaction between Scan and Case-R might be extended to control infinitive clauses in English. Consider the following example, and its schematic representation in (ii):

(i) They decided to catch a fish

(ii) They decided $[_{CP}\ [_{C}\ ]\ [_{TP}\ [_{T}$ to$]\ [_{vP}$ PRO $[_{v'}\ v\ [_{VP}$ catch $[_{DP}$ a fish$]]]]$

Following Chomsky (2000, 2001), I assume that control T bears an EPP feature, which should raise PRO to its spec (i.e., TP). I also follow Chomsky & Lasnik (1993) in assuming that PRO has an unvalued (null) Case. Given that PRO refers to the subject pronoun *they* in (i). I assume, following Chomsky & Lasnik, that PRO bears the interpretable features [3-person, pl].

Given Scan and Case-R, this type of φ-agreement between *they* and PRO might be explained. Specifically, under the assumption that PRO (like adjectives) comes from the lexicon with φ-features that are empty of values (i.e., the specific values for these feature must be provided by an element which has these values), such an element is the subject pronoun *they*. Under the FI model, the non-finite C selects T and transfers all of its features (i.e., null nominative [Case], unvalued φ-features) to T. The complex C-T begins to probe for goals, and finds PRO in spec *v*P. As a result of Agree between C-T and PRO, the unvalued Case feature on PRO receives a null (nominative) Case value from C-T, and at the same time, the unvalued φ-features on C-T receive valuation from PRO.

4. Zero Copula

Consider the following example of a Zero Copula construction (example (8), repeated here for ease of reference):

(8) ar-rajul-u mariiḍ-u-n
DEF-man-NOM sick(M.S.)-NOM-INDEF
'The man is sick'

As has been shown, in this type of construction, the predicative adjective *mariiḍ* 'sick(M.S.)' resembles the subject noun in all features of Case, [Number], and [Gender] but not definiteness. Notice further that there is no visible functional head which could be responsible for the nominative Case values on both elements.

From (8), two possibilities emerge as to where the nominative Case value on the predicative adjective (in particular) might come from: It could come from a shared source (i.e., a *single* functional head), which could also be responsible for the nominative Case value on the subject. Alternatively, it could come from a different source (i.e., other than that responsible for the nominative Case values on the subject). I will argue in favour of the latter option.

We have seen that when an overt Case assigner is used, the subject noun as well as the

predicative adjective (in particular) show asymmetries in Case values, as in:

(9) ʔinna ar-rajul-a mariiḍ-u-n
Comp DEF-man-ACC sick(M.S.)-NOM-INDEF
'(It is confirmed) that the man is sick'

(10) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick(M.S.)-ACC-INDEF
'The man was sick'

The data in (8)-(10) suggests that the Case value on the predicative adjective must have come from a different source/functional head, thus confirming that nominative Case comes from a different (as opposed to shared) source.[114]

Assuming this to be the case, the predicative adjective *mariiḍ* 'sick(M.S.)' in examples (8) and (9) must be headed by a functional head which is capable of assigning/valuing its nominative Case, independently of that valued on the subject noun *ar-rajul* 'DEF-man', meaning that the subject noun is c-commanded by a different functional head, which is responsible for its nominative Case value.

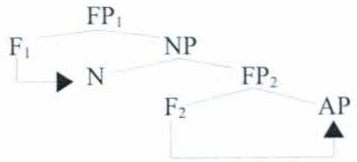
If this is correct, then I will argue, contra Fassi-Fehri, 1993; Mohammad, 2000; Soltan, 2006, 2007, and traditional grammarians that nominative Case values in nominal, Zero

114 The bulk of the literature on Case assignment has been concerned only with theta-bearing nominals. Case-marked adjectives evidently raise a new set of theoretical questions, most of which are beyond the scope of this thesis.

Copula constructions are not *default* Case values; but rather, are valued by functional heads.

The conjecture that two functional heads (responsible for Case valuation) exist in example (8) suggests further that these functional heads must bear unvalued φ-features, which must be valued through an Agree relation with nominal (or adjectival) elements. Thus, to illustrate, I will assume the following *preliminary* representation, where FP is Functional Phrase:

(11)



In this representation, the functional phrase FP_1 selects the NP *ar-rajul* 'DEF-man'; another functional phrase FP_2 selects the AP *mariiḍ* 'sick(M.S.)'. Assuming that the head F_1 of FP_1 is a Probe (with an unvalued set of φ-features), F_1 must search for a Goal with a valued set of corresponding features to Agree with it, thus enabling the derivation to converge at LF. Likewise, let us assume that F_2 is another Probe which, like F_1, must search for a Goal in order to value its unvalued φ-features.

However, as far as the standard mechanics of the FI model of Agree are concerned, the

representation in (11) is inadequate for the following reasons: First, the exact nature of FP_1 and FP_2 is not clear; that is, it is not clear whether they are phases or not. Second, if they are phases, then the phase heads F_1 and F_2 must transfer their features (e.g., Case, unvalued φ-features, etc) to some lower, "proxy" (non-phasal) heads.

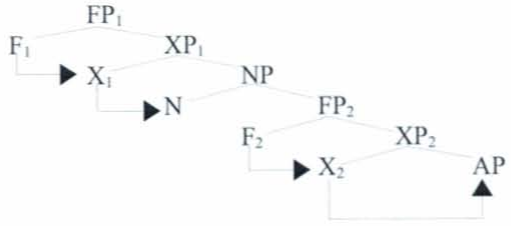
Richards (2007a, 2007b) argues for the existence of proxy heads, and states that without these, phasal heads cannot perform their syntactic operations. Richards' argument builds on two basic phase-theoretic assumptions: (a) Value-Transfer simultaneity, and (b) PIC. Assumption (a) entails that valuation (of uninterpretable features) applies simultaneously with Transfer (Spell-Out). As has been explained, according to PIC, the edge of the phase belongs to the following, higher phase level, as far as Spell-Out is concerned, thus spelling out the complement of the phase separately from the edge of that phase. This means that the unvalued features on a phasal head cannot remain on that head, and must be transferred to (or inherited by) a proxy (recipient) head in order for the derivation to converge.

Thus, FI conforms to (a) as it signals simultaneity of Transfer without a delay.[115] Richards then formulates inheritability as "uF must spread from edge to nonedge (i.e., from C to T, v* to V, etc.)" (2007a, p. 569). From this, the existence of proxy heads becomes necessary, for it is supported by the considerations of the SMT, and the generalization that phasal heads cannot inherit features from other phasal heads. Thus, in conformity with

115 Note that a delay in Transfer (Spell-Out) is expected under Chomsky (2001), and earlier works.

the FI, there must be proxy heads to inherit the features of phase heads F_1 and F_2. The representation in (11) can now be modified as:

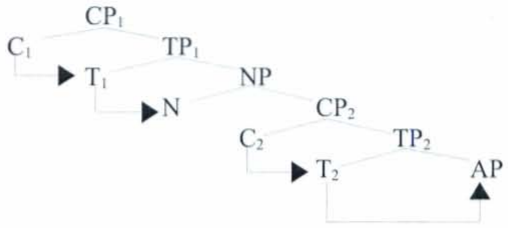
(12)



In this representation, proxy heads are represented by XPs. According to FI, the phase heads F_1 and F_2 select proxy heads X_1 and X_2, respectively, and the features on these phase heads are inherited by the proxy heads. Once selected, the proxy heads begin to Probe for Goals: N and A.

The nature of FP_1 and FP_2 must, however, further be clarified. Chomsky (2005) argues that the nominative Case value on a nominal (or adjectival) reflects an Agree relation between a complex C-T Probe and that nominal. Extending Chomsky's argument to the facts in example (8), we would assume (but will later reject) that the nominative Case values on the subject noun and the predicative adjective reflect an Agree relation between two C-T Probes and two Goals (N and A). If this is correct, then we should assume further that the proxy heads in (12) (i.e., X_1 and X_2 of XP_1 and XP_2, respectively) may actually be TPs, as in:

(13)



Assuming the representation in (13), the nominative Case values on N and A are due to an Agree relation with Probes C_1-T_1 and C_2-T_2, respectively. However, this does not account for the asymmetries in Case values shown in examples (9) and (10) above. In particular, according to (13), the Case value on the predicative adjective *mariiḍ* 'sick(M.S.)' must always be nominative (valued by the C_2-T_2 Probe); however, this conclusion is challenged by that fact that in example (10), where the Case value on A is accusative.

Representation (13) does not account for the fact that the subject noun bears an accusative Case value, as in example (9), which cannot be attributed to the C-T Probe (under Chomsky's theory). Thus, this representation must be modified to accommodate these facts.

Valuation of the uninterpretable φ-features on the Probe, in particular, raises more challenges for the representation in (13) (as well as for the Agree theory in general, as will be explained shortly). That is, when a Probe locates an adjective as its potential

Goal, this adjective must be able to value the uninterpretable φ-features on the Probe (by carrying φ-features), otherwise the derivation will crash at LF.

In section 6.1.2. of chapter 3, I argue, following Baker (2008), that nouns and adjectives do not come from the lexicon with the same φ-feature contents; specifically, adjectives lack the [Person] feature. According to Baker, adjectives (unlike nouns) do not have intrinsic φ-features. However, I diverge from Baker, and assume that, depending on their type, adjectives enter the derivation with empty slots for the φ-features [Gender] and [Number] (i.e., they have no values for these φ-features), and must therefore receive values for these φ-features. Given the fact that adjectives in Arabic usually agree with the nouns they apply to, but not vice versa, I further argue that agreement-features on an adjective are not lexical, but instead reflect that successful value-sharing relation with a noun has occurred.

Keeping this in mind, and considering representation (13), we notice that the adjective originates lower than the noun in the structure. If CP_2 is a phase, as I assumed earlier, then the Probe C_2-T_2 carries a valued Case feature in addition to an unvalued set of φ-features, which must be valued by a nominal. The adjective serves as a potential Goal for the complex Probe C_2-T_2; however, considering that this adjective does not have any values for its φ-features, and at the same time lacks the [Person] feature, it cannot value the Probe's unvalued φ-features, thus causing the derivation to crash at the CP_2 phase

level, a real problem for the FI model of Agree.[116]

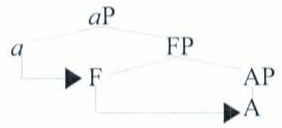
Thus far, the representation in (13) has proven to be problematic for various reasons: (i) The phase labelled CP_2 does not address/reflect the adjectival nature of the phase, nor does it reflect the empirical fact that a predicative adjective can bear an accusative Case value as in (10); (ii) (13) does not address the fact that an adjective lacks the [Person] feature (altogether), and lacks values for the remaining φ-features (i.e., [Number] and [Gender]), so that it cannot serve as an ideal Goal for the C_2-T_2 Probe; (iii) it does not show the adjective's dependancy on the noun (i.e., it does not represent how the φ-feature values on the noun are reflected on the adjective); and (iv) the positioning of the subject noun is not conventional.

To address these problems, I begin by proposing a slightly modified internal structure for the predicative adjective. First, as mentioned earlier, the label CP does not reflect the nature of the predicative adjective, for CP is correlated with *wh*-movement which we do not see in (13); therefore, I will assume that the predicative adjective is headed by a phasal[117] *a*P. Being phasal, the head[118] *a* of *a*P must select a proxy head (or receptacle) to which all the features of *a* are transferred (given the basic premises of FI theory). I further assume that that proxy head cannot be T; for want of a more specific label, I will refer to this proxy head as F of a functional projection FP. AP then is directly headed by

116 Assuming that CP_2 is the point for Spell-Out, for now.
117 See also Kremers (2003) who argues that adjectives in Arabic constitute phases.
118 P&T (2004) propose a similar ap phrase, which lacks tense.

an FP, as in (14):

(14)



To enable FI, the phase head *a* selects the proxy head F, which inherits the features on *a*, thereby forming a complex Probe *a*-F, which then begins searching for a Goal.

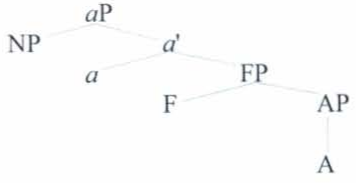
As for the type of features the phase head *a* bears, I argue following Chomsky (2005) that *a* has a set of unvalued φ-features[119] [*u*φ], a valued Case feature [Case], and necessarily an Edge Feature ([EF]). Furthermore, I argue that the Case feature on the head *a* has a nominative value. As will be shown, the necessity of an EF on *a* stems from the fact that the exact values of the predicative adjective's φ-features are dependant on those of the subject noun. In other words, the adjective must be placed in a position close enough to the subject noun in order to get the same set of φ-values (through Scan), where *close enough* means that no phase-bound clausal Goal intervenes between the subject noun and the adjective. This will not be possible unless the phase head *a* bears an EF which is able to fulfill this requirement by raising the adjective to a point where it can interact with the

119 One wonders if this Probe, being adjectival, lacks the [Person] feature. Assuming this to be the case, a φ-complete adjectival head will contain the features [Gender] and [Number] only; and conversely, a φ-*in*complete head would lack one of these features. Although, at this point in the research, this does not seem to have empirical consequences for the current data, it will be addressed later on.

subject noun.

Further modification to the representation in (13) must provide a better positioning for the subject noun. That is, according to Chomsky (1995), a subject NP originates in spec *v*P; therefore, by drawing an analogy between *v*P (in Chomsky's sense) and *a*P in the current analysis, I will argue that the subject noun originates in spec *a*P. The phase *a*P then will have a full argument structure:[120]

(15)



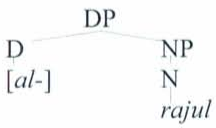
In this position, the thematic-role on the subject noun (occupying the external argument of *a* position) is licensed by the phasal head *a*. This view of *a* (as a theta-marker) receives indirect support from works by Bowers (1993) and Baker (2003). Bowers argues that the thematic role assigned to the subject in a similar position as in (15) comes from the Pred head (in association with an AP, of course). This view is adopted by Baker (2003); however, the Pred head in Baker's analysis takes an F_AP as complement (see, Baker's analysis in chapter 3).

120 Cf. Chomsky's (2001) argument that *v**P is a phase with a full argument structure.

Thus far, I have argued that the nominative Case-feature value on the subject noun in example (8) reflects an Agree relation with the complex Probe C_I-T_I. I will follow this line of argument and propose, following Chomsky (2007) that "root clauses must have C, even if it is unpronounced" (p. 20); I take this as an indication that the subject noun is headed by a proxy head T of TP, which in turn, is headed by a CP. In this, I follow Al-Balushi (2011), and Musabhien (2008), and argue that a Zero Copula construction in Arabic (such as (8)) is finite, and that it constitutes a full CP.

Having presented the internal structure for the predicative adjective, I now turn to discussion of the internal structure of the subject noun. We notice that the subject noun in example (8) is definite (i.e., marked by the definite article *al-*), whereas the predicative adjective is indefinite. To account for this asymmetry in definiteness, let us suppose, following the DP Hypothesis (Abney, 1987), that the NP is actually headed by a DP, and that the definite article *al-* originates in the head D, as in (16):

(16)



Benmamoun (2000), Fassi-Fehri (1993), and Mohammad (1988) analyze the definite article *al-* as the head of a DP, which heads a nominal phrase. Under this analysis,

nominal heads raise and incorporate to this head.

Borer (1999) argues that in both Arabic and Hebrew, the head D of a DP is "unspecified for its ±*definite* value" (pp. 75-76). By contrast, N is inherently specified for the definiteness feature, thus a definite noun must be written as *noun*[+def]. According to Borer, definiteness (in addition to [Gender] and [Number]) on an adjective is triggered by the noun, thus the definiteness feature value on the adjective is set to <+>. In a subsequent movement, the noun adjoins to the head D, and the unspecified value on D is set to <+>. This way, the definite articles *al-* (in Arabic) and *ha-* (in Hebrew) are spelled out on both the noun and the adjective.[121]

In the current analysis, however, I propose, following Fassi-Fehri (1993), and others, that nominal and adjectival elements are both headed by DP. Contra Borer, I assume that the D heading a nominal element comes from the lexicon with a slot for the definiteness feature. This slot can either have a [definite] or [indefinite] value. Likewise, the D heading attributive adjectives (in particular) comes from the lexicon with an empty slot for the definiteness feature (i.e., $[...]_{def}$), meaning that it does not have a value. This empty feature slot must be valued/filled during the course of the derivation by another D heading a nominal element (through Scan).

121 Kihm (2001), however, proposes a different view: D in Semitic is contentful, and definiteness is not a feature to be shared or passed down, thus definiteness cannot be explained as definiteness agreement (p. 19). Instead, Kihm ascribes definiteness agreement between the noun and its modifying adjective to the existence of a DP (heading the adjective), and that agreement is a "necessary consequence of the type of constructions the two constituents are in" (p. 19). However, Kihm does not elaborate on the nature of this *type of construction* nouns and adjectives occur in.

I further claim that the D heading a predicative adjective comes from the lexicon with no slot for the definiteness feature; thus, regardless of the value borne by the head D (which heads the nominal element this adjective applies to), the value of the adjectival D head will always be *indefinite*.

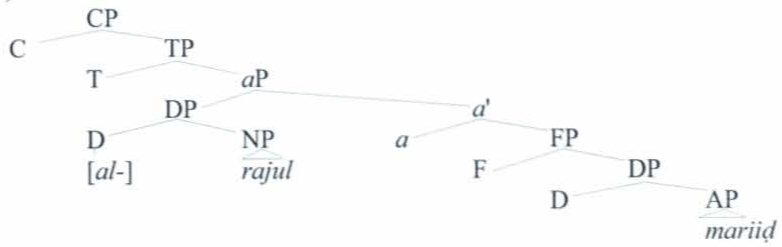
This means that D which heads nominal elements comes from the lexicon with either one of the following slots: [indef] or [def]. In contrast, the D heading adjectival elements comes with one of the following slots: empty $[...]_{def}$ (for attributives), or zero [0] (for predicatives). Furthermore, I argue that the feature [(in)def] on nominal D, like any other feature, can be transferred to and/or shared with other Ds heading syntactic elements, such as adjectives, demonstratives, etc.

Thus, to recap, even though the predicative adjective in (8) is indefinite, it will still be headed by a D; however, this D head is empty (i.e., it does not contain a slot for the definiteness feature.[122]) I propose the following modified representation[123] for the Zero Copula construction in (8):

122 The distinction between lacking a slot for a certain feature and lacking a value for an existing slot will become clearer as we discuss actual (APs construction) examples.

123 Notice that phasal *a*P in (17) structurally resembles that proposed in Baker (2008) (see, section 6.1 in chapter 3); however, it is obvious that both structures are based on different theoretical and conceptual grounds.

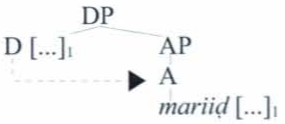
(17)



Thus far, my line of argument that the Zero Copula structure in example (8) contains phases receives further support from Chomsky's (2007) proposal that nominal phrases are analogous to verbal phrases and can "sometimes also constitute phases" (p. 25).

To illustrate how the operations Scan and Case-R interact to produce the derivation of the Zero Copula construction in (8), I begin by considering the derivation of the adjective inside the *a*P phase. Scan entails that once the head D enters the derivation, it scans its c-command domain,[124] which includes the AP *mariiḍ* 'sick(M.S.)'.[125] The scanner D establishes a *link* with the scanned lexical item A (in AP):

(18)



124 Recall that in Chomsky's Probe-Goal system, no such operation occurs before the phase head enters the derivation.

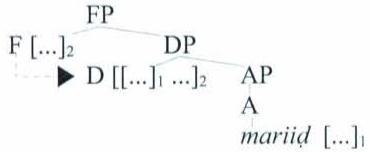
125 Scan is represented by the dashed lines in (18), and a *link* is represented by subscripted and numbered square brackets: $[...]_{number}$.

Scan, as has been argued, establishes a link between the scanned items; the establishment of links is a matter of information-gathering and/or sharing between the scanner (D) and the scanned item (A in this case). The shared information will include φ-features (particularly, the values of these features) and definiteness features.

However, assuming that the adjective *mariiḍ* 'sick(M.S.)' does not have any intrinsic values for its φ-features, and that the head D does not bear a slot for the Definiteness feature, I claim that no information is expected to be gathered by and/or shared with D; therefore, no value-sharing should take place at this point and the link $[...]_1$ remains empty.

Next, the proxy head F of FP is introduced into the derivation. Under Scan, the head F immediately begins to scan its c-command domain, and establishes a link with D, as in (19):

(19)

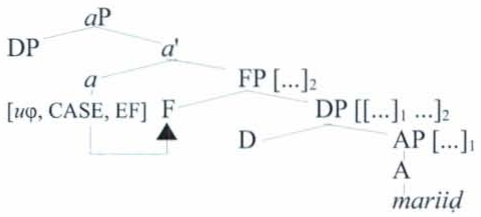


Note that a new link $[...]_2$ is established between the scanning head F and the scanned

item D; moreover, the link $[...]_1$ on D, which has already been created between D and A is now included within the newly established link (i.e., $[[...]_1 ...]_2$). Linking F and D allows values (if any) to be shared between F, D, and A (which is already linked to the head D). Like D and A, the proxy head F is empty of any feature values; thus, nothing can be shared among these elements at this point, and the links remain empty.

Next, the phase head *a* of *a*P is introduced with a set of unvalued φ-features (i.e., [*u*φ]), a valued Case feature, and an EF; the head *a* transfers these features to the proxy head as soon as it is inserted into the derivation:

(20)



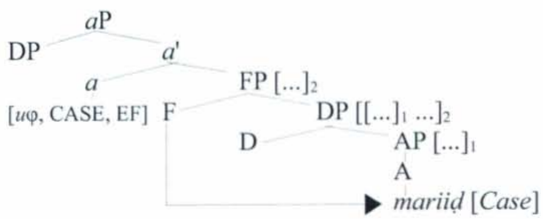
Once the proxy head F inherits the features of the phase head *a*, a complex Probe *a*-F is formed, as the solid line in (20) shows.[126] The Probe *a*-F begins to probe for a Goal; the only possible Goal for this Probe is the adjective *mariiḍ* 'sick(M.S.)'. However, assuming this adjective lacks values for its φ-features, no valuation is expected to occur since the unvalued feature (i.e., [*u*φ]) on the Probe *a*-F will not be valued by A. Similarly, the

126 Notice that it is also possible that the phase head, just like any other syntactic element, Scans and establishes a link with the proxy head. In this case, Scan equals *select* in Chomsky's version of FI.

unvalued feature (i.e., [*u*Case]) on A will not be valued by the Probe (as a side-effect of φ-agreement between A and the Probe). Thus, the Agree relation between the Probe *a*-F and the Goal A is not successful so that if Spell-Out applies[127] at FP (the complement of the phase), the derivation will crash.

To maintain the close and mutual relation between Case and agreement, and to avoid a likely crash of the derivation, I claim that despite the fact that A is not an ideal Goal for the Probe *a*-F, *a*-F is able to reserve the [*u*Case] feature on A; however, valuation will not be realized immediately on A. To state this in slightly different terms, Case-R requires that the Case value on A be reserved as nominative (i.e., *[Case]* in (21)); however, no morphological realization of the nominative Case on A is possible at this point in the derivation:

(21)



What this means is that a Case value (reserved by Case-R) on an element remains morphologically unrealized until the conditions for a successful Agree relation are

127 Following the arguments of Chomsky (2005) and Richards (2007a, 2007b).

satisfied. This in turn means that a delay in Spell-Out must be forced in order to save the derivation from crashing. In other words, the Agree relation between the Probe *a*-F and A in (21) is not possible because A lacks values for its φ-features; but, once this essential condition of Agree is met (i.e., a set of φ-values becomes available on A), the reserved Case becomes morphologically realized. (Notice that the only source for φ-values in this structure is the subject noun *rajul* 'man' in spec *a*P).

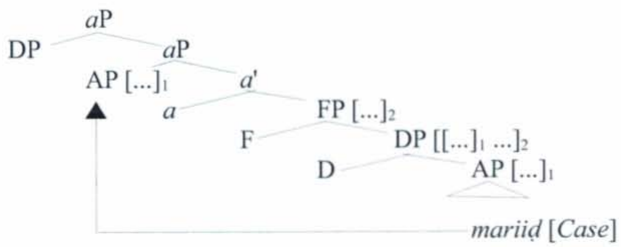
It seems that, contrary to the initial assumption that Scan and Case-R force a delay in Spell-Out, it is the Goal that forces such a delay. Specifically, it is the absence of the φ-values on the adjective *mariiḍ* 'sick(M.S.)' (the Goal) which forces a change to the point where Spell-Out applies in the derivation, thus prolonging the lifespan of the phase. More particularly, under Richards' (2007a) simultaneity of Value and Transfer, Spell-Out must apply at FP in (21), and the derivation will crash. However, such a crash can be avoided if the assumption that a Goal which lacks φ-values forces a delay in Spell-Out is on the right track. From this follows another assumption that a Goal which has no φ-features (i.e., lacks φ-features altogether), cannot signal/force a delay in Spell-Out and cause the derivation to crash at the same phase level.

The assumption that the absence of φ-values on a Goal triggers delay in Spell-Out, but that Scan and Case-R do not, conforms conceptually with Chomsky's notion of φ-features as the major player in the Agree process.

The existence of an EF on the phase head *a* is supported by the necessity for A to have values for its φ-features.[128] The EF on the Probe *a*-F then causes A to raise. Given the structure in (21) above, the landing site of the raised A cannot be the specifier position of *a*P since this position is already filled by the subject DP.

Inspired by Chomsky's (1995) discussion of inner and outer specifiers of the light *v*P, and building on the analogy I have developed between *v*P and *a*P, I will argue that an *a*P can have an inner and outer specifier, and that A may raise to either. Unlike Chomsky, however, I suppose that the landing site for the raised A will be the *inner* specifier of *a*P (not the outer specifier). Richards (1999) argues for the *tucking-in* concept to explain multiple movements of *wh*-phrases; therefore, placing the raised A into the specifier position of the inner specifier of *a*P is similar to Richards' concept (see, (22)). Moreover, tucking-in A would maintain the correct word order: N A.

(22)

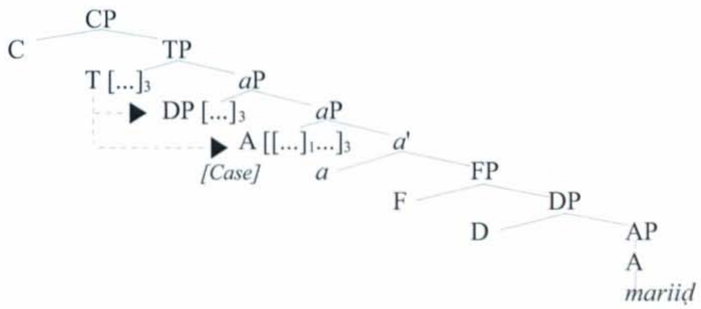


128 Notice that Scan may render the existence of the EF in (21) unnecessary; however, its existence becomes crucial when we consider more adjectival constructions in the following chapters.

To recap, at this point in the derivation, the Agree relation between A and the Probe *a*-F is not complete due to lack of φ-values on A. Nevertheless, a nominative Case value is reserved for A by the Probe *a*-F, and the lifespan of the phase *a*P is prolonged, thus avoiding an inevitable crash in the derivation. (Notice further that the raised A has already been part of the link $[...]_1$).

Next, I discuss the complete derivation of the Zero Copula construction by considering the higher, CP phase. At the CP level, once the proxy head T of TP is introduced in the structure, it begins to Scan its c-command domain. T then Scans the subject DP in the specifier position of the outer spec of *a*P, and the raised A in the specifier position of the inner spec of *a*P, thus establishing links between both elements:

(23)

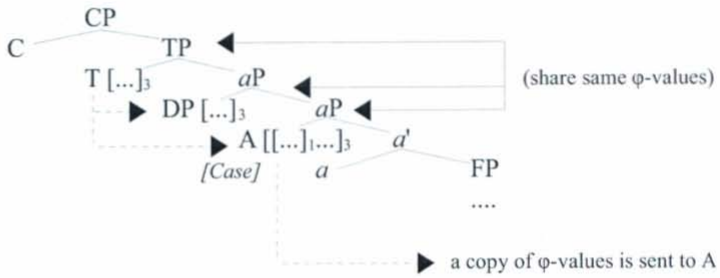


Notice that both the inner and outer specs of *a*P are accessible to higher, outside operations, which also conforms with the PIC. Furthermore, the phasal head *a* can also be reached by T, if we *literally* follow the premise of the PIC, a point which will be

discussed further in the Participial chapter.

The links established between T, the subject DP, and the raised A allow these elements to share values; more particularly, under Scan, the subject noun is able to share a copy of its φ-values (i.e., third person, masculine, singular]) with the raised A:

(24)



Alternatively, the DP *ar-rajul* acts as a potential scanner and Scans the raised A directly, and establishes a link with it, thus allowing A to receive a copy of the DP's φ-values. However, for the present purposes, it suffices to assume the structure in (24), where T connects both DP and A.

Once the raised A receives a copy of the φ-values on the subject DP, a copy of the same set of values is sent/transferred to the original copy of A under AP (through the links which connect A and its copy: $[[...]_1 ...]_3$) in (24). As a result, the empty slots in the original copy of A now contain a copy of the shared φ-values which allows A to

effectively participate in the Agree process by valuing the [*u*φ] on the Probe *a*-F. Simultaneously, the reserved Case value on A becomes morphologically realized[129] as nominative, thus indicating that the Probe *a*-F has established a successful Agree relation with the Goal A.

Next, as soon as the phase head C of CP enters the derivation, it selects the proxy head T, which inherits all the features on C (i.e., [*u*φ], Case, and possibly EF). The complex Probe C-T then probes for a Goal and finds the subject DP. Based on the Probe-Goal relation, the unvalued φ-features on the C-T Probe get valued by the valued φ-features on the DP; simultaneously, the unvalued Case feature on the DP receives valuation (i.e., nominative) by the C-T Probe. Note that the complex C-T reaches the raised A, which bears a reserved Case value. As has been argued, Case-R prevents the raised A from receiving a new Case value from the C-T Probe.

Under Agree, once an uninterpretable feature receives valuation, it must be deleted. Specifically, the [*u*φ] features on the Probes C-T and *a*-F, as well as the shared φ-values on the Goal A, get deleted due to Agree with the interpretable φ-features of the DP *ar-rajul* 'DEF-man'. Similarly, the [*u*Case] features on this DP as well as A delete once these features receive valuation. Before transferring these syntactic objects to the interface levels, Spell-Out removes the uninterpretable (deleted) features from these syntactic

129 Thus, the morphological realization of the reserved Case on the adjective is conditioned by the provision of φ-values.

objects, and the derivation converges[130] at LF. Notice that the deleted features will still be accessible to the phonological component. Thus, the point of Spell-Out in (24) is changed from FP to TP.

Can feature-deletion of valued φ-features and Case be the same (i.e., part of the same process)? In theory, deletion of valued φ-feature and Case must occur simultaneously; however, based on Scan and Case-R, an [*u*Case] on an A will be reserved (ready for deletion, but not completely deleted yet) until A receives values for its φ-features. Once A gets φ-values, the [*u*φ] on the Probe deletes, and the [*u*Case] on A becomes fully deleted. Generally, as far as the feature-deletion operation, I will maintain, following Chomsky, the close association of both φ-features and Case.

One advantage of assuming Scan then becomes clear when we consider the notion that T establishes a link with the subject DP as well as with the raised A (as in (24)). As a result, Scan not only makes value-sharing possible between these elements, but also introduces them as potential Goals for the Probe, thus facilitating and dictating the Probe's mission.

To rephrase this, the Probe C-T becomes able to probe *multiply* (i.e, probing more than one Goal at a time, which are the subject DP and the raised A, in this case). This has some favourable consequences; for example, in the case of *concord*, where an attributive

130 Chomsky (2008, p. 146) states that, for "ease of processing", all copies of a moved element remain available to the semantic interface; however, for the general purpose of "minimization of computation", and for the phonological component to operate efficiently, all of these copies should be erased except for one.

adjective manifests full agreement with the noun it modifies (i.e., in Case, φ-features, and definiteness), Scan facilitates and ensures concord by allowing both the DP and raised A to enter into an Agree relation with a single Probe (as shown in example (36), below).

A similar case of *multiple agreement* has been proposed in Hiraiwa (2001), for Japanese.[131] Under Scan, assuming an *extra* [+MULTIPLE] feature on the Probe seems unnecessary since similar Goals would have been connected by links (conforming to the MP's principle of economy).

Moreover, another positive side-effect of Scan shows up in certain cases where movement of a nominal or adjectival element is not necessary, as Scan allows agreement features (i.e., φ- and Case) on that element to get valued at a distance (e.g., in-situ, and through links) thereby *limiting* the use of Move, a step preferred in Chomsky's recent works.[132] A similar conclusion has been reached by Frampton & Gutmann (2000) who argue that agreement (independent from Move) results in the formation of Case chains, thereby separating/marginalizing Case chains from Move.

131 Hiraiwa's analysis has been reviewed in section 6.2 of chapter 3.

132 Notice, however, that Move cannot necessarily be overridden by Scan, as shown in (23) where the predicative A has to move anyway.

4.1 Zero Copula headed by the complementizer ʔinna 'that'

This subsection illustrates how the operations Scan and Case-R interact with other syntactic operations for the purpose of producing convergent derivations at LF. Specifically, the use of predicative adjectives in a construction headed by the complementizer *ʔinna* 'that' will be considered:

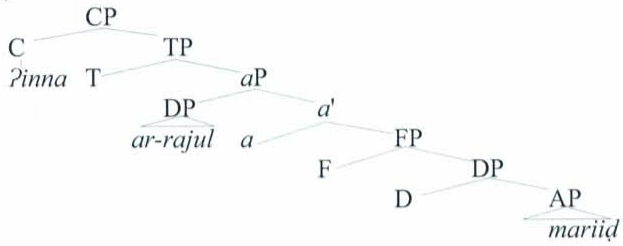
(25) ʔinna ar-rajul-a mariiḍ-u-n
Comp DEF-man-ACC sick(M.S.)-NOM-INDEF
'(It is confirmed) that the man is sick'

The Case-value on the subject noun *ar-rajul* 'DEF-man' is accusative when the subject is preceded by the complementizer *ʔinna*; however, no change occurs to the nominative Case value on the predicative adjective *mariiḍ* 'sick(M.S.)'. Traditional Arab grammarians have argued that *ʔinna* has the ability to assign an accusative Case to a following nominal.[133]

Semantically, the use of the complementizer *ʔinna* puts some degree of emphasis on the meaning of the sentence, in which it is used.[134] Building on the previous discussion of the Zero Copula construction, I propose the following representation for the structure in (25):

133 Al-Shamrani (1994) argues that the complementizer *ʔinaa* does not assign Case beyond the subject, and concludes that the nominative Case value on the predicative adjective in (25) is a form of default Case.
134 Arab grammarians (e.g., Nuur id-diin, 2003) argues that the complementizer *ʔinna* 'that' brings emphasis to the whole sentence.

(26)



The representation in (26) is similar in structure to that in (17); yet, it differs from it in that the complementizer *ʔinna* originates under the head C (of CP). I assume that the overt complementizer phrase CP in (26) is a phase (analogous to covert CP in (17)), and that C is the head of that phase. I also assume that, like any other phasal head, the complementizer *ʔinna* has a set of unvalued φ-features, valued Case feature (with an accusative Case-value), and possibly (but not necessarily) an EF.

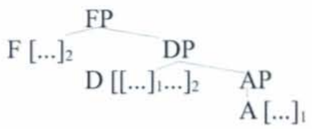
Following the FI model of Agree, I assume that the head C transfers all of its features to the proxy head T. In this respect, I diverge from Musabhein (2008) who argues that, unlike other features on C, the valued Case feature on *ʔinna* is not transferred to the proxy head.

Keeping these points in mind, let us consider the derivation of (25): Under Scan, the head D (of DP) scans its c-command domain, and establishes a link with the predicative adjective A *mariiḍ*. As previously stated, A has no values for its φ-features which could

be shared with D, and thus no value-sharing takes place at this point. (Recall that the head D does not have a slot for the definiteness feature either).

In a similar fashion, the proxy head F of the functional projection FP Scans its c-command domain, and establishes a link with D. Notice that D has already created a link with A:

(27)



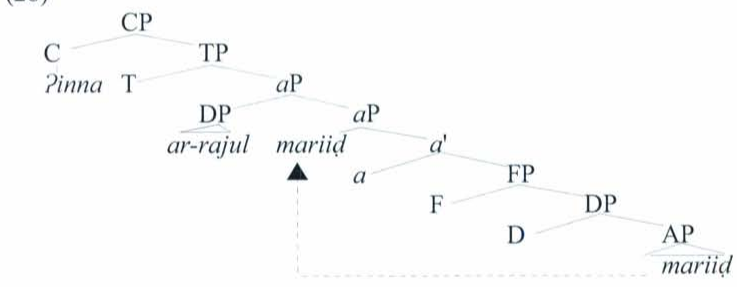
Next, based on the FI model, once the phase head *a* of *a*P is introduced into the derivation, it selects a proxy head to which *a* transfers all of its features. Thus, the proxy head F inherits the features of *a*, forming a complex *a*-F Probe which begins to probe for a Goal. Assuming that F has created a link with D, probing for a Goal has become easier through this link.

The A *mariiḍ* 'sick(M.S.)' is a potential Goal for the Probe *a*-F. Assuming that adjectives lack values for their φ-features, the Agree relation between the Probe *a*-F and A is incomplete. However, the Case-R operation helps Agree to *partially* succeed by Case-reserving the value on A as nominative.

In Chomsky's version of Agree, the derivation of (25) must crash at the phasal *a*P level as the unvalued φ-features on the Probe *a*-F cannot be valued by A. However, as has been argued, the absence of φ-values on the Goal A *itself* instructs the computational system that a delay in Spell-Out must be forced, thus extending the lifespan of the phase and avoiding a possible crash in the derivation. Changing the point of Spell-Out allows for a set of φ-feature values to be supplied to A, as will be shown next.

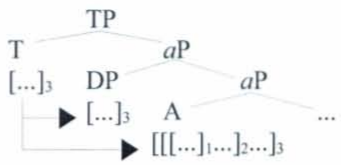
The EF on the Probe *a*-F raises A to the inner spec of *a*P; this way, the adjective becomes structurally close to the source of the φ-values (i.e., the noun *ar-rajul*):

(28)



Inside the CP phase, the proxy head T Scans the subject DP in the outer spec position of *a*P as well as the raised A, thus creating a new link with these elements: (Notice that A has taken part in previous links)

(29)



Now, the proxy head T, DP, and A become part of a single link: $[...]_3$. At this point, the raised A has become structurally close enough to the subject (i.e., included in the same link), thus making it possible for the noun to share a copy of its φ-values with the raised A.

Simultaneously, a copy of the received φ-values is transferred to the original copy of A under the operation Scan. Once received, the original copy of A (under AP) is now able to value the [*u*φ] on the Probe *a*-F, leading to a successful Agree relation and enforcing the morphological realization of the reserved Case value (nominative) on the A *mariiḍ*.

Next, when the phase head C is merged with TP (recall that the complementizer *ʔinna* originates under C), it selects T, and the complex C-T Probe is formed. C-T begins to search for a Goal. Having established a link with the subject DP and the raised A, C-T probes both elements. The Probe C-T enters into an Agree relation with the subject DP, thereby receiving valuation for its unvalued φ-features, and assigning a Case-value (i.e., accusative by *ʔinna*) to the subject. Recall that the Case-value on the raised A is reserved (nominative) by the Probe *a*-F so that the Case-value on A is immune to change. This

way, the derivation should converge at LF since all the uninterpretable features have been valued.

As for where the Spell-Out of the complementizer *ʔinna* occurs, it could either be said to occur at the root (i.e., C) as in Chomsky (2001), or, following Branigan (2011) and Fitzpatrick (2006), at a higher, uninterpreted (phasal) structure (i.e., in the left-periphery.[135])

4.2 Zero Copula headed by the auxiliary kaana 'was'

Zero Copula constructions can be preceded by verbs such as the auxiliary *kaana* 'was'.

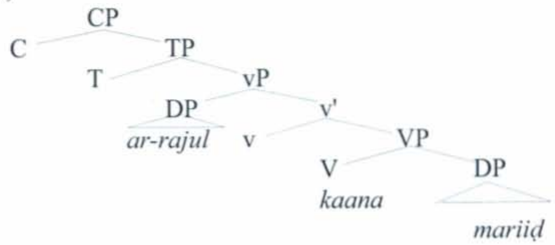
(30)	kaana	ar-rajul-u	mariiḍ-a-n
	was	DEF-man-NOM	sick(M.S.)-ACC-INDEF
	'The man was sick'		

The predicative adjective *mariiḍ* in a Zero Copula sentence bears an accusative Case value when the construction is preceded by *kaana*. According to traditional Arab grammarians, this accusative Case value on A is assigned by the verb *kaana*. Adopting this view, and seeking to understand how Case and agreement features are valued in this

135 In the sense of Rizzi (1997).

structure, I will propose that phasal *a*P is not part of this structure. Accordingly, the accusative Case value on A reflects that A is not shielded from outer, higher Probes. Moreover, following standard theory, I assume that the subject DP originates in spec *v*P as in the following representation of (30):

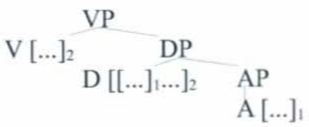
(31)



Only two phases exist in this structure: *v*P and CP. Also, notice that the adjective *mariiḍ* is headed by a DP, which is merged as a complement to the lexical V. (Recall that there is no slot for definiteness on the head D).

The derivation of (30) proceeds when the head D Scans its c-command domain and creates a link with A. Similarly, the lexical V Scans D and a new link is created between V and D (and A by association with D):

(32)



Next, when VP is merged with functional *v*, V gets selected and all the features (i.e., [*u*φ], Case, and EF) on *v* are transferred to V and the complex Probe *v*-V is formed. The Probe *v*-V probes the adjective *mariiḍ* as a potential Goal (note that having been linked to V, probing for A is guided).

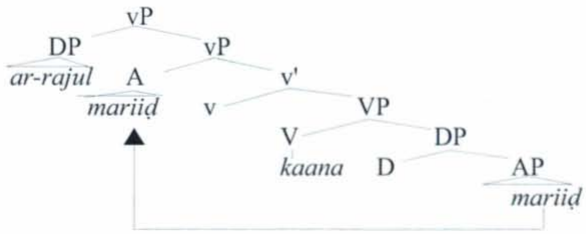
The adjective *mariiḍ* 'sick(M.S.)' lacks φ-values and thus cannot be an ideal Goal for the Probe *v*-V. Under the standard form of the Probe-Goal theory, the derivation must crash at *v*P; however, as has been argued, the absence of φ-values on the adjectival Goal forces a delay and change to the point where Spell-Out should occur (i.e., TP). Keeping this in mind, the derivation can be saved from crashing, and the *v*-V Probe is able to Case-reserve the unvalued Case value on A (accusative).

However, one issue arises pertaining the Probe-Goal relation between *v*-V and A: Thus far, it has been argued that adjectives come from the lexicon with empty slots for the features [Number] and [Gender] only. This seems plausible as long as the probing head is adjectival (i.e., *a* of *a*P, as has been claimed); it is problematic, however, when the probe is verbal as in (31). That is, the *v*-V Probe supposedly bears a *full* set of unvalued φ-features which includes the [Person] feature (in addition to [Number] and [Gender]). Probing an adjectival element, then, becomes problematic since the *v*-V Probe will not receive valuation for its unvalued [Person] feature, simply because the adjective does not have such a feature in the first place.

This dilemma could be resolved if we assume that an adjective can receive a valued [Person] feature from a nominal source (in addition to the values it usually receives for the [Number] and [Gender] features). This way, receiving an extra, valued feature (i.e., [Person]) would not detract from the basic assumption that adjectives intrinsically lack this feature, nor would it impact on the Agree relation between the adjective and the *v*-V Probe. Thus, (referring to footnote (119) page 178), we could think of phasal *a*P as intrinsically having unvalued (empty) slots for the features [Number] and [Gender], while being able, perhaps, to receive a valued [Person] feature from a nominal source (as an extra feature).

The EF on the Probe *v*-V causes A to raise to/ tuck in the inner spec of *v*P, where it becomes structurally close to the subject noun *ar-rajul* 'DEF-man':

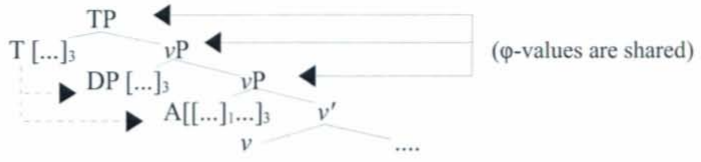
(33)



Next, when the proxy head T (of TP) is merged with *v*P, it scans its c-command domain and establishes a link (i.e., $[...]_3$) with the subject DP as well as with the raised A: (Notice

that A is part of another link)

(34)

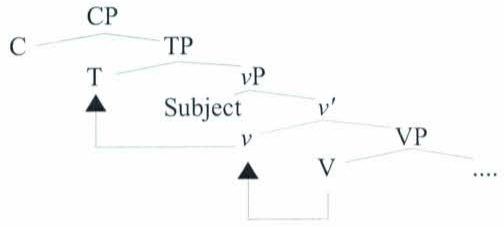


Under Scan, the subject noun *ar-rajul* and A are now part of the same link, and thus can share φ-values. That is, at this point, the subject DP shares a copy of its φ-values with the raised A. As can be seen from (34), the raised A has already been included in another link (i.e., $[[...]_1...]_3$), which allows A to share a copy of the newly shared set of φ-values with its original copy under AP. Once A shares a copy of these values with its original copy, Agree between the Probe *v*-V and A inside the phase *v*P succeeds. That is, A is now able to value the [*u*φ] feature on the Probe *v*-V and, the reserved accusative Case value on A becomes morphologically realized, a reflection of a successful Agree relation.

Once the phase head C of CP is merged with TP, C selects the proxy T and T inherits all the features of C (i.e., [*u*φ], Case, and possibly EF). The complex Probe C-T searches for a Goal, and finds the subject DP. The C-T Probe values the unvalued Case feature on the subject (nominative), and at the same time, receives valuation for its unvalued φ-features; therefore, a convergent derivation is produced. Indeed, had it not been for Case-R, the raised A would have received a nominative Case value by C-T.

It should be understood that the VSO word order in example (30) above (and elsewhere) can be achieved via movement of the copula *kaana* from V to *v*, and then to T, as illustrated in (35):

(35)



4.3 Attributive adjectives

Next, to understand how full agreement between a noun and an attributive adjective in a Zero Copula construction is obtained, I examine how Agree makes use of the operations Scan and Case-R. Consider the example in (36):

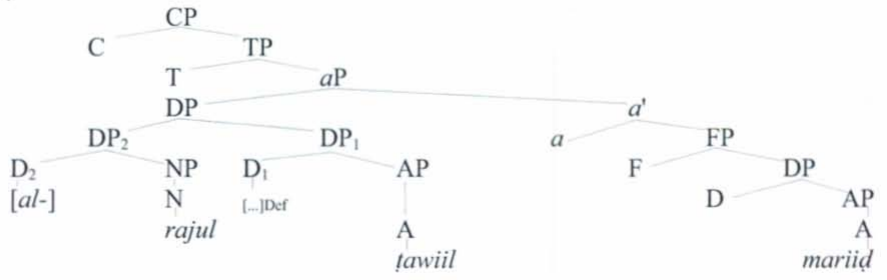
(36) ar-rajul-u aṭ-ṭawiil-u mariiḍ-u-n
DEF-man-NOM DEF-tall(M.S.)-NOM sick(M.S.)-NOM-INDEF
'The tall man is sick'

Unlike predicatives, an attributive adjective shows full agreement with the noun it

modifies: in Case value, φ-features, and definiteness. Like predicatives, I will assume that attributive adjectives are also selected by DPs; however, I will argue for one crucial difference between the D heading a predicative adjective and the one heading an attributive adjective: The head D in attributives bears an empty slot for definiteness (i.e., has an unvalued definiteness feature [*u*Def]), which must be filled by a matching feature of definiteness; the D head in predicative adjectives, on the other hand, lacks such a slot altogether.

Structurally, I will claim that predicative and attributive adjectives differ from each other. Specifically, on the basis of the data which will be introduced in chapter 5, I will propose a relatively unfamiliar structure for the attributive type of adjectives. In this structure, the DP (heading the attributive AP) adjoins to the subject DP *ar-rajul* 'DEF-man', which is the highest nominal projection containing the noun and its modifying adjective:

(37)



Before considering the whole derivation of (36), let us see how Scan functions inside the subject DP. Assuming the internal structure proposed in (37), there are two DPs; one

heads the attributive adjective *ṭawiil* 'tall' (which is labelled DP_1), and the other one heads the NP *rajul* (labelled DP_2, for illustration).

Under Scan, the head D_1 Scans the adjective *ṭawiil* 'tall', and a link is created between the two elements. Likewise, the head D_2 Scans N *rajul* 'man', and a new link (i.e., $[...]_2$) is established. These links allow the noun *rajul* to share a copy of its φ-feature values (i.e., [masculine] and [singular]) as well as definiteness with the adjective *ṭawiil.*

A percolation analysis will not be sufficient to explain the state of full agreement obtained between an attributive adjective and the noun it modifies. In other words, percolation will prove to be insufficient when more adjective-containing constructions are analyzed; especially, when we consider one construction of Arabic called the Adjectival Construct which will be introduced in chapter 6. The adjective in this construction is located between two nominal elements. Although the adjective semantically modifies the following noun, it shows full agreement with the previous noun only. Thus, assuming a percolation analysis of agreement in attributive adjectives will lead to a discrepancy in φ-features, and will not be the best analysis.

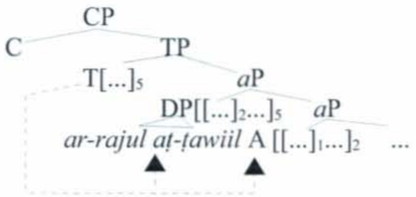
It should be made explicit that neither definite nor indefinite *adjectival* DPs are phases in my system.[136] Compare this with a suggestion in Chomsky (2007) which states that

136 That does not say that it is entirely impossible for a valued (Definite) *adjectival* D to be phasal, which might be the case; however, no theoretical consequences seem to matter for the present work.

definite nominal DPs can be phasal whereas indefinite DPs cannot.

The derivation inside phasal *a*P proceeds as previously outlined. Once the predicative adjective *mariiḍ* gets raised to the inner spec of *a*P (due to an EF of the Probe *a*-F), it becomes accessible to the proxy head T. Under Scan, the head T Scans the subject DP as well as the raised A and creates a single link with these elements: $[...]_5$ in (38):

(38)



Being part of a single link with the subject DP allows N to share a copy of its φ-values with the raised A. Consequently, a copy of these values is transferred to the original copy of A under AP (inside the *a*P phase). This way, the [*u*φ] on the Probe *a*-F, as well as the reserved [*u*Case] feature on the Goal A, get valued (nominative) as a result of a successful Agree relation.

In the CP level, once the phase head C enters the derivation, it selects the proxy head T. T then inherits all the features on C, and a complex C-T Probe is formed. The C-T Probe searches for a Goal, probing DP *ar-rajul aṭ-ṭawiil* and the raised A. At this point, the subject DP serves as Goal which values [*u*φ] on C-T, and receives valuation for its

[*u*Case] (nominative). Notice that although the raised A may function as a Goal for C-T, the Case-value on this adjective will not be affected since it has already been reserved by the Probe *a*-F, under Case-R.

The attributive adjective *ṭawiil* 'tall' receives a nominative Case value by association (or concord) with the subject DP. However, accepting this assumption requires that characteristics of Scan be reformulated to allow sharing Case-values between nouns and adjectives (in addition to φ- and definiteness).

An alternative way of explaining Case-valuation on this adjective would be to assume that the Probe C-T probes *ṭawiil* directly, and assigns it a nominative Case value, especially if we consider that by the time T enters the derivation, the attributive adjective would have received a copy of the φ-values on the noun *rajul* 'man', thus making it a potential Goal for Agree.

4.4 Small Clauses

(39)	wajad-tu	[ar-rajul-a	muxliṣ-a-n]
	found-I	DEF-man-ACC	honest(M.S.)-ACC-INDEF
	'I found the man honest'		

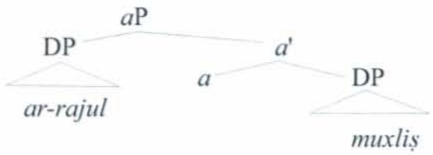
(40) wajad-tu [al-bint-a muxliṣ-at-a-n]
found-I DEF-girl-ACC honest-F.S.-ACC-INDEF
'I found the girl honest'

The bracketed parts in these examples have been analyzed as Small Clause (SC) constructions (see, section 5. in chapter 3.) The adjectives *muxliṣ* 'honest(M.S.)' and *muxliṣ-at* 'honest-F.S.' agree with the nouns *ar-rajul* 'DEF-man' and *al-bint* 'DEF-girl', respectively, in φ-features as well as in Case; however, they disagree in definiteness (i.e., the adjectives are indefinite.[137]) In this respect, SCs resemble Zero Copula constructions; the noun and the (predicative) adjective agree in φ-features and Case but not in definiteness. (However, recall that when Zero Copula constructions are preceded by Case assigners such as *ʔinna* or *kaana*, both the subject noun and the adjective show different Case values).

In this section, the analysis proposed for Zero Copula will be adopted for SCs. I argue that the resemblance between these two constructions suggests that what has been analyzed as a SC in the literature is actually a **non**-phasal *a*P. The noun *ar-rajul* 'DEF-man' in (39) originates in the specifier position of this *a*P, and the head *a* takes the adjectival DP *muxliṣ* 'honest(M.S.)' as its complement:

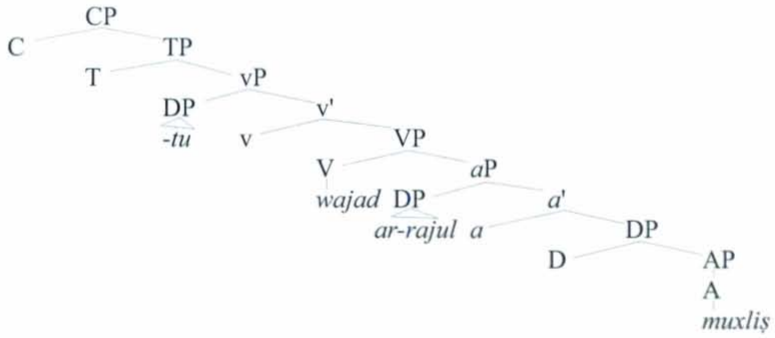
137 Note that it is also possible for the noun to be indefinite as in:
(i) wajad-tu rajul-a-n muxlis-a-n
found-I man-ACC-INDEF honest(M.S.)-ACC-INDEF
'I found an honest man'

(41)



Being non-phasal, there is no need for the head *a* (of *a*P) to select a proxy head (which would inherit the features on a), as can be seen in (41). Also, being non-phasal, *a*P cannot act as a shield, meaning that it cannot protect what is inside of it from higher Probes, as will be demonstrated shortly. Keeping these assumptions in mind, I suggest the following representation for (39):

(42)

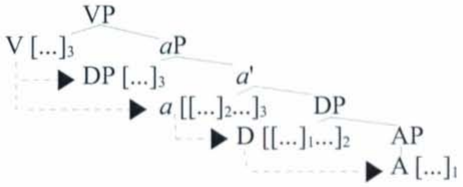


Assuming (42), it follows that the head D (heading AP) Scans A and establishes a link with it. Similarly, when the head *a* enters the derivation, it Scans D, and a new link is created. Also, inside the DP *ar-rajul*, the D head Scans the N and a link is established between them.

It has been established that all syntactic items are potential scanners. This means that the noun DP *ar-rajul* 'def-man' could Scan the head *a*, thus establishing a new link with it. Alternatively, we could assume that DP does not Scan the head *a*; instead it is the lexical head V which Scans both DP (*ar-rajul*) and *a*. Whichever the correct alternative might be, the point to be highlighted here is that we need to connect the DP with the adjectival DP *muxliṣ*, leading to successful value-sharing between these elements.

Assuming that a link has been established between DP *ar-rajul* and the head *a*, once the lexical head V enters the derivation, it begins to Scan *ar-rajul* (in spec *a*P), and the head *a*, either directly as in (43) or indirectly through the DP:

(43)



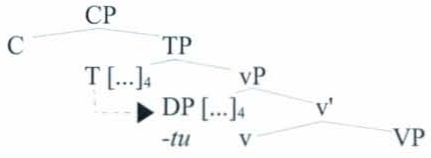
As has been argued, the adjective *muxliṣ* 'honest(M.S.)' lacks values for its φ-features, and the only source for such values will be the subject DP *ar-rajul*. Thus, up to this point in the derivation, N shares a copy of its φ-feature values with A: [masculine], [singular]. However, the unvalued Case features on A as well as on the DP *ar-rajul* cannot be

determined because no functional category has been introduced to the derivation, yet.[138]

Next, once the phase head *v* of *v*P enters the derivation, it selects the lexical head V and a complex Probe *v*-V is formed. The Probe *v*-V searches for Goal(s) which can value its [*u*φ] feature. Thus, Assuming that *a*P is non-phasal, the Probe *v*-V (guided by Scan) is able to value the [*u*Case] features on N *ar-rajul* 'DEF-man' as well as that on A *muxliṣ* 'honest(M.S.)': accusative. Consequently, the [*u*φ] features on this Probe receive valuation, signalling a successful Agree relation.[139]

In the CP phase level, once the head T enters the derivation, it Scans the subject DP *-tu* 'I' in spec *v*P, and a link (i.e., $[...]_4$) is created as in (44):

(44)



Next, when the phase head C enters the derivation, it selects T. T then inherits all the features of C, and a complex Probe C-T is formed. The Probe C-T searches for a potential Goal. The subject DP *-tu* 'I' has a set of valued φ-features which can value the

138 Note that Case-R does not function in such a construction since by the time phasal head *v* enters the derivation, the adjective would have received a copy of the φ-values on the noun *ar-rajul*.

139 Notice that it would be enough for the Probe *v*-V to receive valuation for its unvalued φ-features by entering into Agree with the DP, alone. This would be problematic as A would not receive valuation for its [*u*Case]. This can be taken as a positive side-effect of the operation Scan in the Agree process.

[$u\varphi$] feature on C-T. As a result of Agree, the [uCase] feature on this DP gets valued (nominative) by the C-T Probe, and the [$u\varphi$] on C-T gets valued by the DP.

Notice that the structure in (42) shows that the DP *ar-rajul* 'DEF-man' in spec *a*P is not assigned a theta-role. Thus, to solve this problem, we could assume that the head *a* is indeed able to assign a theta-role to this DP, or alternatively assume, following Baker (2008) and Bowers (1993), that the head *a* resembles a Pred head in that the combination of the head *a* and AP creates a category capable of theta-marking the DP in spec *a*P.

Having shown how the interaction between Scan and Case-R conspires to produce convergent derivations in Zero Copula constructions and what have traditionally been analyzed as SCs, I will extend this analysis and investigate the use of a certain type of pronoun which is optionally used in (non-)Zero Copula constructions. Structurally, this pronoun is inserted between the subject noun and its predicate. The use of this pronoun serves a semantic purpose (e.g., it adds a degree of emphasis to the meaning of the structure).

4.5 ḍamaaʔir al-faṣl 'Pronouns of separation'

As the terminology suggests, a pronoun of separation (PS) is a pronominal element which intervenes between, and thus separates, the subject from what follows. Traditional Arab

grammarians such as Ibn Yaʕiiš ([d. 1245]), Sibaweihi ([d. 796]), and Zamaxšari [d. 1144], state that a PS is used to indicate that the part that follows the pronoun is a *predicate* not an *attribute,* thus avoiding possible ambiguity. Moreover, they add that the use of a PS serves a semantic purpose: It conveys some emphasis (or focus) to the meaning of the sentence. They also note that when a PS is used, what follows that PS must always be definite.

A PS refers to the subject and agrees with it in φ-features. Ibn Yaʕiiš states that this type of reference entails that the PS (as an emphatic element) must also agree with the subject in definiteness (i.e., PS must be definite). The consensus among traditional grammarians holds that a PS always bears a nominative Case value, regardless of the Case value borne on the subject noun to which it co-refers. Consider the following examples with a PS:

(45) ar-rajul-u *hwa* al-mariiḍ-u
DEF-man-NOM *he* DEF-sick(M.S.)-NOM
'the man is (the one who is) sick' or 'the man is the sick (one)'

(46) ʔinna ar-rajul-a *hwa* mariiḍ-u-n
that DEF-man-ACC *he* sick(M.S.)-NOM-INDEF
'(It is confirmed) that the man is (is the one who is) sick'

(47) kaana ar-rajul-u *hwa* al-mariiḍ-u
was DEF-man-NOM *he* DEF-sick(M.S.)-NOM
'(it was) the man who was sick'

Different analyses of PS have been proposed in the traditional literature. For example, the noun *ar-rajul* 'DEF-man' in (45) is analyzed as *mubtada?* 'subject'. Two main analyses are proposed for the PS *hwa* 'he' in (45): First, it is analyzed as (second) *mubtada?* 'subject' and, together with the following *xabar* 'predicate' (i.e., *hwa al-mariiḍ-u*), form a single constituent which then serves as a sentential predicate (or *jumlat al-xabar*) for the subject *ar-rajul* 'DEF-man'. Second, the PS *hwa* 'he' is analyzed as a mere *pronoun of separation* which plays no role in assigning a nominative Case to the predicate *al-mariiḍ* 'DEF-sick(M.S.)' (see, e.g., Ibn Yaʕiiš) nor does it bear a Case value (see, e.g., Jurjaani).

Notice that the adjective *mariiḍ* must be definite, as the ungrammaticality of the following example shows:

(48)	*ar-rajul-u	*hwa*	mariiḍ-u-n
	DEF-man-NOM	*he*	sick(M.S.)-NOM-INDEF

The structure in (45) has a *predicative* reading despite the fact that the adjective is definite, a characteristic usually associated with attributive adjectives (see, e.g., Eid, 1983; and Plunkett, 1993, for a similar observation).

Some contemporary researchers, however, have analyzed a PS as a pronominal copula[140]

140 Plunkett (1993) regards the following structure as *equational* or *topic-comment*:

(see. e.g., Eid, 1991 (for Arabic); and Ritter, 1995 (for Hebrew[141].)) Following traditional grammarian analyses, Eid (1991) argues that PS "function as anti-ambiguity devices to force a sentential, vs. a phrasal, interpretation of a structure" (p. 42).

Specifically, in a Zero Copula construction, as in (45), the pronoun *hwa* 'he' is inserted between the subject noun *ar-rajul* 'DEF-man' and the adjective *al-mariiḍ* 'DEF-sick' to ensure a *focus* reading. The pronoun *hwa* 'he' agrees with the noun *rajul* 'man' in [Gender], [Number], and [Person] features (i.e., third person masculine singular), as can be seen from the ungrammaticality of the following examples:

(49) *ar-rajul-u *hya* al-mariiḍ-u
DEF-man-NOM *she* DEF-sick(M.S.)-NOM

(i) Ali-un hwa al-mariiḍ-u
Ali-nom *he* DEF-sick-NOM
'Ali is the sick (one)'
(ii) al-mariiḍ-u hwa Ali-un

141 Ritter (1995, p. 424) argues that pronouns (in particular, third person pronouns) and agreement belong to the same category, and provides evidence from Modern Hebrew's present tense nominal sentences:

(i) dan hu xaxam
Dan *he* smart (m.)
'Dan is smart'
(ii) sara hi xaxam-a
Sara *she* smart-f
'Sara is smart'

The third person pronominal elements *hu* and *hi* show agreement with the subject in [Number] and [Gender] features. Ritter analyzes these pronominal elements as spell-out of agreement or INFL in verbless sentences; and takes this as an evidence that pronouns and agreement belong to the category NumP. Notice that these pronouns do not appear when there is a verbal predicate, indicating that only the verb raises to INFL:

(iii) Dan (*hu) ohev glida
Dan (*he) likes ice cream
'Dan likes ice cream' (p. 424)

Furthermore, Ritter analyzes first and second person pronouns as DPs, and the head D is specified for φ-features.

(50) *al-bint-u *hwa* al-mariiḍ-at-u
DEF-girl-NOM *he* DEF-sick-F.S.-NOM

Here, the inserted pronouns do not agree with the subject nouns in Gender, and thus the sentences become ungrammatical. As previously stated, the focus pronoun bears a nominative Case value, which is different from that on the affix *-hi* (i.e., genitive) in (51):

(51) marar-tu bi-hi hwa
passed-I by-him he
'I passed by him'

Fassi-Fehri (1988, p. 109) claims that a postverbal pronominal[142] (e.g., *hum* in (52)) is not the true subject, but rather a focussed version of the true subject, Null pronominal element:

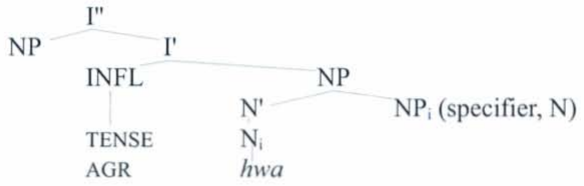
(52) jaaʔ-uu hum laa ʔixwatu-hum
came-3.M.Pl they not brothers-their
'They came, not their brothers'

According to Fassi-Fehri, this is an example of a pronominal doubling, where the affix *-uu* '3M.pl' functions as a subject and the pronoun *hum* functions as a *focus* or an "emphatic modifier of the subject" (p. 121).

142 Note that, following the literature, Fassi-Fehri concurs that a PS is invariably nominative.

Eid (1991, p. 58) proposes the following structure for verbless sentences with pronouns:[143]

(53)



In this representation, an NP occurs in a predicate position. Internally, this NP is headed by the pronoun *hwa*.

According to Eid, the pronoun *hwa* is able to assign a theta-role to NP, by virtue of being the head of its NP. Consequently, the NP predicate, as a whole, assigns theta-role to the external subject NP. Thus, what relates the pronoun *hwa* and the copula *kaana*, for example, is that both head maximal projections which occupy a predicate position (p. 59).

Abdel-Ghafer (2003) states that inserting a pronoun between two nominals is optional in MSA.[144] Abdel-Ghafer, however, adds (p. 161) that when a pronoun is used, the first

143 Recall that Eid analyzes such pronouns as *copula pronouns*; however, she contends that they should not be analyzed as verbs.

144 Notice that like MSA, Modern Hebrew *optionally* allows the insertion of pronouns; however, it becomes obligatory in Modern Hebrew when the following nominal is definite (or "a proposition of identity" (Rothstein, 1995, p. 27). Compare the following examples from Rothstein (1995); *hu* is optional when the subject is pronominal as in (ii):

i. dani *(hu) mar yosef (p. 33)
Dani 3MS Mr. Yosef
'Dani is Mr. Yosef'

nominal must be stressed to indicate a contrastive reading, for example:

(54) Jamiil-un (hwa) aṭ-ṭaalib-u
Jamiil-NOM 3MS DEF-student-NOM
'Jamiil is the student'

The first nominal *Jamiil* must be stressed in order to show that *Jamiil* is the student and nobody else. Also, Abdel-Ghafer observes that the inserted pronoun does not show full agreement with the noun that precedes it; that is, it shows agreement in [Number] and [Gender] with the preceding noun, but not in Person:[145]

(55) ʔana (hwa) aṭ-ṭaalib-u (p. 162)
I 3MS DEF-student-NOM
'I am the student'

Ouhalla (1999) analyzes a structure made use of in Arabic as well as in Moroccan Arabic. In this structure, an abstract [+f] feature exists in what he calls a *focus phrase*.[146] In (56), the focus phrase is followed by a pronominal copula, which in turn, is followed by a relative clause (Ouhalla, 1999, p. 341): (RM= relative marker)

---

ii. ani (hu) mar yosef (p. 35)
I 3MS Mr. Yosef
'I am Mr. Yosef'

145 Although (55) could be seen as a counterexample to the notion that the inserted pronoun shows full agreement with the subject noun in all φ-features, I will add that such a conclusion may not be entirely accurate. In other words, a possible disagreement in values for the feature [Person] is expected *only* when the subject is pronominal as in example (55), but, such disagreement may not occur when the subject noun is non-pronominal as in (45), for example.

146 According to Ouhalla (1997), one way of identifying this [+f] focus feature is by considering it as a spelled out of a focal stress (see the word in the UPPERCASE letters in (56)).

(56) ZAYNAB-u hiyya llatii ʔallaf-at ar-riwaayat-a
Zaynab-NOM she RM wrote-she DEF-novel-ACC
'It was ZAYNAB who wrote the novel'

According to Ouhalla, the pronoun *hiyya* 'she' has an emphatic/contrastive reading (like strong pronouns[147] in general).

With this much background in mind, I will assume that the insertion of a pronoun in the analyzed constructions provides a sense of assertion/emphasis to the meaning of the sentence. Additionally, where a focussed, asserted interpretation of the meaning of a structure is construed, I will claim, following Ouhalla (1997), that an abstract [+f] feature exists in that structure, which also designates it as a focus phrase at the computational level. This assumption and more will be discussed in detail in the next section.

4.6 New analysis of constructions with PS

Based on the fact that PS must show agreement with the subject noun (i.e., the specification of the φ-feature values on the pronoun is dependent on those of the subject noun), I will argue that these pronouns (like adjectives) come from the lexicon with no intrinsic values for their φ-features; instead, they receive their φ-values from a linked

147 Strong pronouns differ from weak/clitic ones in that they have "the extra focus feature" (Ouhalla, 1999, p. 354).

nominal source. Furthermore, I claim that these pronouns come with empty slots for their φ-features: $[...]_{Person}$, $[...]_{Number}$, and $[...]_{Gender}$.

The suggestion that some pronouns have no intrinsic φ-values is not a novel one as some researchers have argued that reflexive pronouns, for instance, receive their φ-values from their controllers (i.e., nouns) (e.g., Huang & Tang, 1991; Reuland, 2001).

Following the literature, I agree that in addition to the *emphasis* reading, conveyed by the use of the pronoun *hwa* in (57), a *focus* reading can be obtained from this sentence. I will further assume, in the sense of Rizzi (1997) and Ouhalla (1997, 1999), that the focus reading can be structurally represented by including a Focus Phrase (FocP) in the structure in (57). However, as will be shown, I will maintain the use of the FP label to identify the FocP.

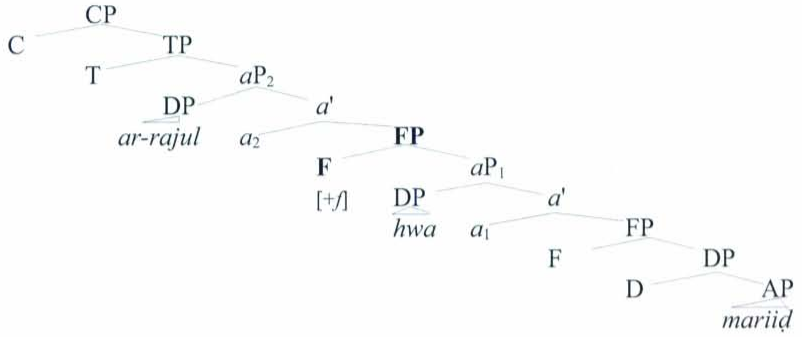
In addition, structurally, I will assume a construction with recursive[148] phases for (57):

(57)	ar-rajul-u	*hwa*	al-mariiḍ-u
	DEF-man-NOM	*he*	DEF-sick(M.S.)-NOM
	'the man is (the one who is) sick' or 'the man is the sick (one)'		

Thus, for (57), I propose the following representation:

148 Here, I assume that the cartography of recursive *a*Ps is semantically-based, in the sense of Cinque (2005).

(58)



According to (58), two recursive *a*Ps exist in (57). The subject noun *ar-rajul* 'DEF-man' originates in spec of the higher aP_2, while the pronoun *hwa* is placed in spec of the lower *a*P (i.e., aP_1). Abney (1987) proposes that a pronoun is a DP which contains the D head only (i.e., pronouns do not have an NP projection). I follow Abney (1987) and assume that pronouns of separation are DPs, however, I will maintain that they project an intermediate projection: NP. As will become clear, assuming recursive phases provides an account of the Case property and position for the pronoun of separation *hwa* 'he' (i.e., nominative).

It has been established that in Zero Copula sentences (with no PS), the predicative adjective *mariiḍ* 'sick(M.S.)' is headed by a DP; but, the head D of this DP lacks a slot for the definiteness feature. Given that the adjective in (57) is definite, I will assume that it resembles attributive adjectives in that its D head has an (abstract) empty slot for the

definiteness feature, and that this feature must be filled in the course of the derivation.

Following Jackendoff (1972) and Ouhalla (1997, 1999), I assume that the bold-faced head **F** in (58) (which corresponds to Foc of FocP) is associated with a [+*f*] feature which marks the scope of the FocP. Furthermore, based on the FI model, I assume that the head **F** of **FP** acts as a proxy head for the phase head a_2 of aP_2. That is, the bold-faced **FP** in (58) not only serves a semantic purpose by providing a focus reading for this structure, but also serves a functional purpose as well (i.e., receptacle of features).

The suggestion that the head **F** (containing the [+*f*] feature) is a proxy head is not at odds with the premises of the FI model. In other words, by making an analogy with the head T of TP, which, according to Chomsky (2005), contains a *Tense* feature prior to inheriting features from the phase head C; nothing in the FI model prevents **F**, which already has the feature [+*f*], from inheriting additional features.

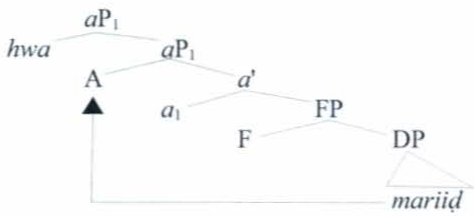
If these assumptions are on the right track, then the derivation of the structure in (58) will proceed as follows. When the head D enters the derivation, it Scans the predicative adjective *mariiḍ* 'sick(M.S.)' under AP, and establishes a link with it (recall that the D head in this structure differs from any other D head heading predicative adjectives, for it comes with an empty slot for the definiteness feature). As such, this slot must be filled with a value for the definiteness feature.

Next, the proxy head F of FP Scans D (and possibly the adjective), and establishes a link with both elements. Up to this point, there is nothing that can be shared as a result of the established link(s). However, when the phasal head a_1 enters the derivation, it selects the head F and transfers all of its features to F (i.e., [CASE], unvalued φ-features, and an EF).

The complex Probe a_1-F probes for goals and locates the adjective *mariiḍ* as one potential goal. Knowing that the adjective bears no specified values for its φ-features, the adjective cannot serve as a goal; that is, it will not be able to value the unvalued φ-features on the probe, thus leading to a non-convergent derivation. However, the absence of the φ-values forces a change to the point of Spell-Out (as has previously been argued). Also, the Case-R operation allows the [*u*Case] on the adjective to receive a reserved (nominative) Case value from the a_1-F Probe.

The EF on the a_1-F Probe raises the adjective to the inner spec of aP_1, as in:

(59)



Once raised to the inner spec of aP_1, the adjective becomes structurally close[149] to the pronoun *hwa* (in the outer spec of aP_1). The pronoun *hwa*, like an adjective, comes from the lexicon with no specified values for its φ-features. Thus, at this point, although the adjective and the pronoun are close, no value-sharing process is expected to occur.

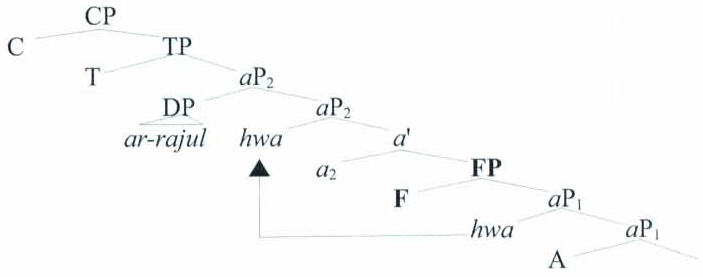
The **F** head (bearing the focus [+*f*] feature) Scans the pronoun as well as the raised adjective in the outer and inner specs of aP_1, respectively, and a single link is created between the three elements (**F**, *hwa*, and A).

Once the phasal head a_2 enters the derivation, it selects the proxy head **F**. The proxy head **F** then inherits all the features of a_2, and together, both form a complex Probe a_2-**F**. This Probe, then, probes the pronoun *hwa* as well as the raised A in both the outer and inner specs of aP_1. This results in the pronoun *hwa* receiving a reserved Case (i.e., nominative by the a_2-**F** Probe). Note that, like adjectives, the absence of φ-values on the pronoun *hwa* forces a further delay to Spell-Out.

Thus, the EF on this probe raises the pronoun *hwa* to the inner spec of the higher aP_2. Notice that raising the pronoun *hwa* (but not A) reflects the Minimal Link Condition (MLC), which basically states that when two syntactic elements are candidate for raising, only the closest one raises:

149 Recall that the term *close enough* means that no phase-bound clausal Goal intervenes between *hwa* and the adjective.

(60)



The raised pronoun then becomes structurally close enough to the subject noun *ar-rajul* 'DEF-man' (i.e., nothing intervenes between the subject noun and the raised pronoun). Through Scan (i.e., the head T Scans the DP *ar-rajul* 'DEF-man' and *hwa,*[150]) the subject DP shares a copy of its φ-feature values with the pronoun *hwa* (i.e., third person, masculine, singular).

Through the established links, a copy of these values is sent to the original copy of *hwa* (in spec aP_1), and, at that point, another copy can be shared with the raised adjective (in the inner spec of aP_1). Also, through links, the raised adjective in turn shares a copy of these φ-feature values with its original copy (i.e., under DP). Knowing that the D head of DP selecting the subject noun bears a valued feature of definiteness [Def], it can be assumed that a copy of this definiteness feature on the subject noun DP is transferred (in the same fashion φ-values are transferred) to the lower DP which heads AP, thus filling

150 Or, alternatively, the DP *ar-rajul* 'DEF-man' *itself* Scans the pronoun *hwa*. Either way, the two elements must be connected/linked in order for value-sharing to occur.

the empty slot under D with a [Def] feature.

Alternatively, following the argument that pronouns are definite, it could be assumed that definiteness on the adjective results from value-sharing between the [Def] feature on the head D (heading the pronoun) and the empty slot for definiteness on the adjective.

As a result of receiving values for their φ-features, the lower a_1-F Probe can now receive valuation for its unvalued φ-features, and the reserved Case value (nominative) on the adjective *mariiḍ* 'sick' becomes morphologically realized.

A similar outcome occurs when the original copy of the pronoun *hwa* receives a copy for its φ-features values; that is, the a_2-F Probe receives valuation for its unvalued φ-features, and at the same time the reserved Case value on the pronoun becomes morphologically realized (nominative).

In the CP level, the phasal head C selects T, and transfers all of its features to T. Both elements form the complex Probe C-T. C-T probes for goals, and finds the subject noun *ar-rajul* 'DEF-man' in spec aP_2. Under Agree, the C-T Probe values the [*u*Case] feature on the subject, and simultaneously, receives valuation for its unvalued φ-features. The derivation, then, converges at LF.

4.6.1. With *ʔinna* 'that'

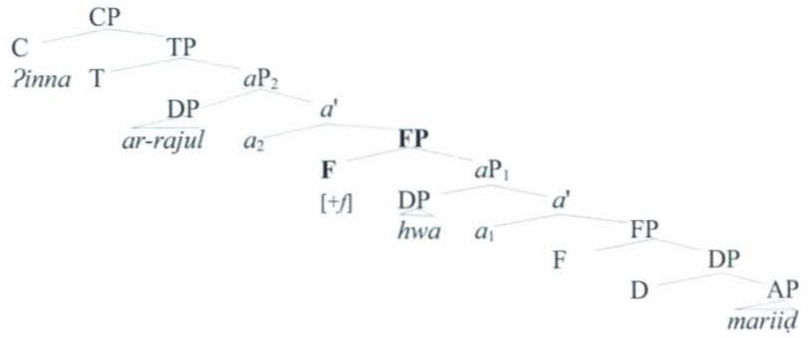
Pronouns of separation can also be used in structures headed by the complementizer *ʔinna* (recall that the complementizer *ʔinna* has a semantic function, asserting and/or strengthening the meaning of a sentence). Likewise, when the pronoun *hwa* 'he' is inserted between the noun *ar-rajul* and the adjective *mariiḍ* in (61), more emphasis (or focus) is added, as reflected in the English translation below:

(61)	ʔinna ar-rajul-a	*hwa*	mariiḍ-u-n
	Comp DEF-man-ACC	*he*	sick(M.S.)-NOM-INDEF
	'(It is confirmed) that the man is (is the one who is) sick'		

Notice that the predicative adjective *mariiḍ* 'sick(M.S.)' in this construction is indefinite. Compare this adjective with that in example (45), which is definite.

Following the (above) line of argument, I maintain a FocP (represented by the bold-faced **FP**) exists in this structure and assume the following representation for (61):

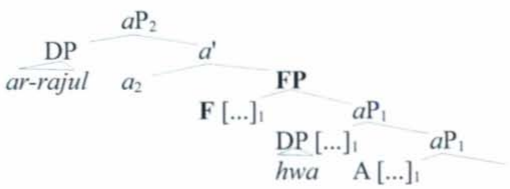
(62)



The derivation of this example resembles that proposed for (58), but with minor differences. The head D of DP (heading the predicative adjective *mariiḍ* 'sick(M.S.)') lacks a slot for the definiteness feature, signalling that the adjective should bear the indefinite marker *-n*. The Case on the noun *ar-rajul* 'DEF-man' is valued accusative by the complementizer, which originates under C.

The a_1-F Probe reserves the Case value on the adjective (nominative), and raises it to the inner spec of aP_1. There, the proxy head **F** (bearing a [+*f*] feature) Scans and connects the pronoun *hwa* and the raised adjective:

(63)



The higher a_2-**F** Probe then probes *hwa* and the raised adjective; however, since both elements lack values for their φ-features, neither one can value the [*u*φ] feature on this Probe. Still, under Case-R, the Probe reserves a nominative Case value for the pronoun *hwa* 'he'. The EF on the a_2-**F** raises *hwa* to the inner spec of aP_2, thus allowing the pronoun to receive a copy of the φ-feature values on the DP *ar-rajul* 'DEF-man' (recall that raising *hwa* alone satisfies the MLC).

That is, the proxy head T Scans and connects the DP as well as the raised pronoun (in spec aP_2). As a result of connecting these elements, φ-value sharing becomes possible, and the pronoun receives specifications for its φ-features (i.e., third person, masculine, singular). The received set of φ-values is shared (through the links created by Scan) with the original copy of the pronoun (i.e., in spec aP_1). Being included in one link, the raised adjective receives a copy of the φ-values on the pronoun, and a copy of these values is shared, in turn, with the original copy of the adjective *mariiḍ* 'sick(M.S.)'.

Having received values for their φ-features, the adjective as well as the pronoun can value the [*u*φ] features on the Probes a_1-F and a_2-**F**, respectively. At the same time, the reserved Case values on these elements become morphologically realized.

The C-T Probe (which contains the complementizer *ʔinna* 'that') values the accusative Case value on the subject noun *ar-rajul* 'DEF-man', and the [*u*φ] on the C-T Probe is valued. This way Agree succeeds and a convergent derivation is produced.

4.6.2. With *kaana* 'was'

Pronouns of separation can also be used in constructions introduced by the auxiliary *kaana*. A pronoun can be inserted between the subject noun and the modifying adjective.[151] Compare the following examples with and without a pronoun:

(64) kaana ar-rajul-u *hwa* al-mariiḍ-u
was DEF-man-NOM *he* DEF-sick(M.S.)-NOM
'(it was) the man who was sick'

(65) kaana ar-rajul-u mariiḍ-a-n
was DEF-man-NOM sick(M.S.)-ACC-INDEF
'the man was sick'

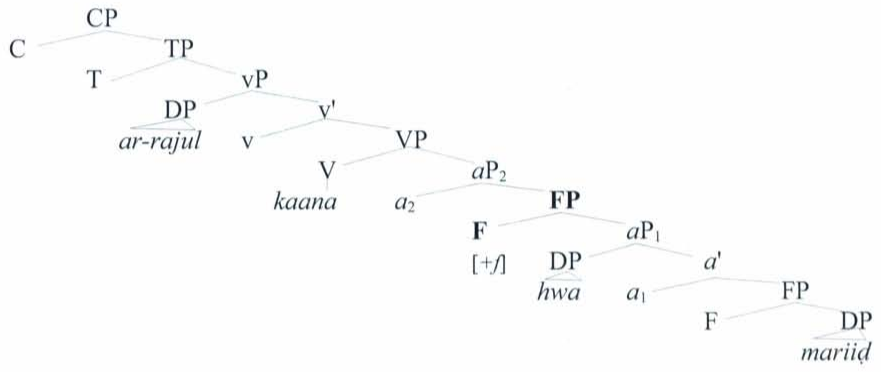
The structure in (64) differs from the one in (65) in various respects: First, the Case value on the adjective is nominative, as opposed to accusative in (65). Second, the adjective in (64) is definite. Third, the pronoun *hwa*, which agrees with the noun *rajul* in φ-features, is inserted between the noun and the adjective. Finally, the meanings differ: in (64) more emphasis is being added to the meaning (due to the presence of the PS *hwa*).

151 Modern Hebrew in this respect differs from Arabic in that it does not allow the insertion of a pronoun in a sentence containing a copula; consider the following example from Abdel-Ghafer (2003, p. 116):

(i) *Dani haya hu student
Dani was.3MS 3MS student
'Dani was a student'

Considering these differences, I will assume that the reading of (64) is an instance of a focused phrase, and assume the existence of a FocP (represented by the bold-faced **FP**), as in (66):

(66)

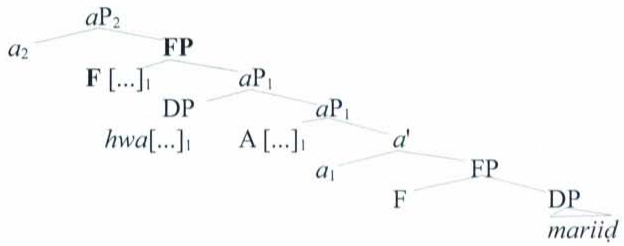


The representation in (66) contains recursive *a*P phases. The pronoun of separation *hwa* 'he' originates in the spec position of the lower aP_1. The spec position of the higher aP_2 is not filled.

As we have seen in previous structures (e.g., (58) and (62)), the derivation begins when the proxy head F inside the lower aP_1 Scans and creates a link with the adjective *mariiḍ* 'sick(M.S.)'. The phasal head a_1 of aP_1 selects and transfers its features to F; features include [CASE], unvalued φ-features, and EF.

Since the adjective lacks values for its φ-features, the Probe a_1-F will not receive valuation for its unvalued set of φ-features; however, the unvalued Case feature on the adjective is reserved by the Probe. The EF on the a_1-F Probe raises the adjective to the inner spec of aP_1, as in:

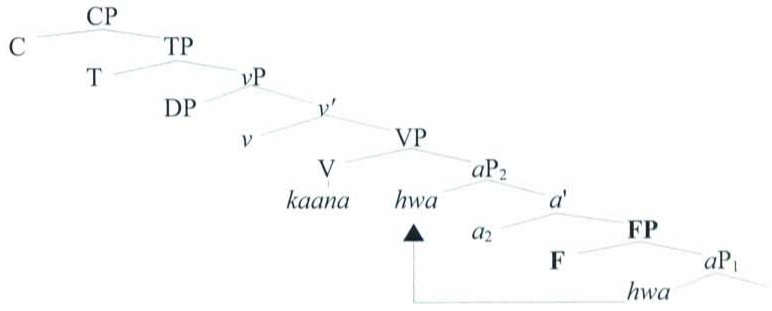
(67)



The adjective becomes structurally close to the pronoun, and both elements can be connected by a Scanner (i.e., the proxy, focus head **F**, notice the links $[...]_1$).

When the head a_2 selects **F**, the proxy head **F** inherits all the features on a_2 (i.e., [CASE], unvalued φ-features, and EF). The complex Probe a_2-**F** probes the pronoun *hwa* (and possibly the adjective A). Given that the pronoun, like the adjective, lacks values for its φ-features, no Agree is expected to occur as a result of probing the pronoun; however, the unvalued Case feature on the pronoun is reserved by the a_2-F Probe (nominative). The EF on the a_2-**F** raises the pronoun higher to the spec of aP_2, as in:

(68)

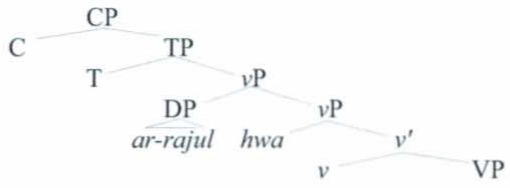


The lexical V *kaana* is selected by the phasal head *v*, and the complex *v*-V Probe is formed. Under FI, V inherits all the features of *v* (i.e., [CASE], unvalued φ-features, and EF).

The *v*-V begins to probe for goals, one of which is the raised pronoun *hwa* 'he'. Recall that at this point, the pronoun lacks values for its φ-features, meaning that it cannot value the unvalued φ-feature on the *v*-V Probe. Also, the [*u*Case] feature on *hwa* has been reserved by the lower probe a_2-F. Thus, at this point, the derivation must crash unless the pronoun receives values for its φ-features.

The EF on the *v*-V Probe then raises the pronoun further to the inner spec of *v*P:

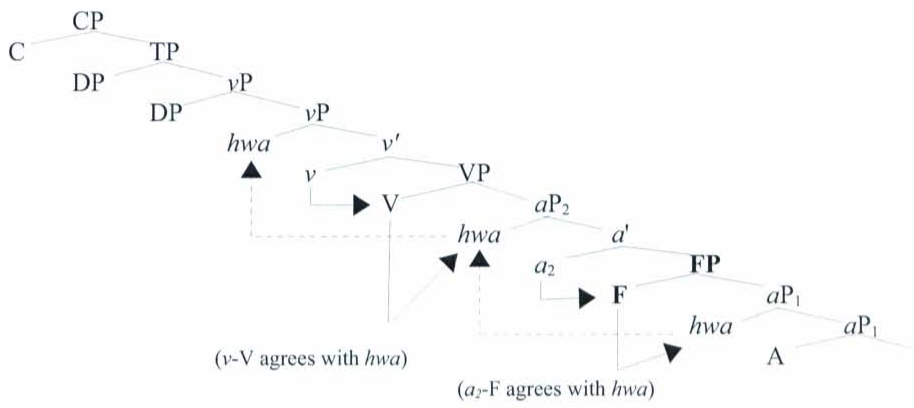
(69)



Once raised, the pronoun becomes structurally close to the subject noun *ar-rajul* 'DEF-man', which serves as the source for the φ-feature values. Under Scan, the head T scans DP *ar-rajul* 'DEF-man' and *hwa*, and a single link is created between these elements. Scan allows the subject to share a copy of its φ-feature values with the raised pronoun (i.e., [third person] [masculine] [singular]).

The established links between the pronoun and its copies allow it to share a copy of the received values with these copies:

(70)



Also, under Scan and the created links, the pronoun can share a copy of these values (i.e., [third person] [masculine] [singular]) with the raised A in the inner spec of the lower aP_1. The raised adjective, in turn, can share a copy of these φ-feature values with its original copy under DP. Up to this point, the pronoun *hwa* and the adjective receive values for their φ-features, and they can value the unvalued φ-features on the their Probes. In particular, the adjective can value [*u*φ] on the a_1-F Probe; consequently, the reserved Case value on the adjective can be morphologically realized as a result of a successful Agree relation.

Similarly, the higher a_2-**F** Probe receives valuation for its [*u*φ] feature via Agree with the pronoun *hwa*. The reserved Case value (i.e., nominative) on *hwa*, although it is not morphologically reflected on this pronoun, is assigned to the pronoun as a side-effect of this process of Agree.

The unvalued φ-features on the *v*-V Probe receives valuation by entering into Agree with the raised pronoun *hwa* (in spec aP_2). Bearing a reserved, nominative Case value, Case on *hwa* will not be affected by the *v*-V Probe.

Inside the CP level, the C-T Probe probes the subject DP in spec *v*P, as a result, the Probe receives valuation for its unvalued φ-features, and at the same time, the [*u*Case] feature on the subject is valued nominative by the C-T Probe. The derivation then converges successfully at LF.[152]

Some traditional works of reference (e.g., Hasan, 1976, among others) suggest that the adjective *mariiḍ* 'sick(M.S.)' in (64) might also bear the accusative Case value, as in:

(71) kaana ar-rajul-u *hwa* al-mariiḍ-a
was DEF-man-NOM *he* DEF-sick(M.S.)-ACC
'(It was) the man who was sick'

According to these researchers, the pronoun *hwa* 'he' is not *mubtada?*, and as such, cannot assign a Case value nor can it intervene between the verb *kaana* and the adjective; thus, it allows the adjective to receive an accusative Case value. In other words, although it is morphologically realized, *hwa* does not count: it is invisible to syntactic operations in this

152 Notice that the multiple movements of *hwa* shown in (70) forces the conclusion that the Case-R operation does not trigger the Activity Condition.

example.[153]

The last idea (i.e., *hwa* is invisible) seems strange and hard to maintain. Adopting this view would not only contradict the common understanding (among most grammarians) that PS always bear the nominative Case value, but also strips this pronoun of any role in the construction. For these reasons, and for the purposes of the current thesis, I accept the construction in (64) as fundamental.

Note that the claim that *a*Ps are recursive *a*Ps receives further support from another construction in MSA:

(72)	al-bayt-u	lawn-u-hu	jamiil-u-n
	DEF-house-NOM	colour-NOM-its	beautiful(M.S.)-NOM-INDEF
	'The house has a beautiful colour'		
	Literally: 'The house, its colour is beautiful'		

In this structure, the two nouns *al-bayt* 'DEF-house' and *lawn* 'colour' are followed by the adjective *jamiil* 'beautiful(M.S.)', which modifies the second noun *lawn* 'colour'.

Assuming recursive *a*Ps will help explain agreement properties for Case and φ-features in

153 Dr. Mohammad Al-Robaei (p.c.) indicates that when the adjective bears an accusative Case, it would be better for the whole meaning of (71) if we continue on this structure by saying something like:

(i) kaana	ar-rajul-u	*hwa*	al-mariiḍ-a	illaði	zurt-u-hu
was	DEF-man-NOM	*he*	DEF-sick(M.S.)-ACC	*who*	visited-I-him

'The man who was sick was the one who(m) I visited'

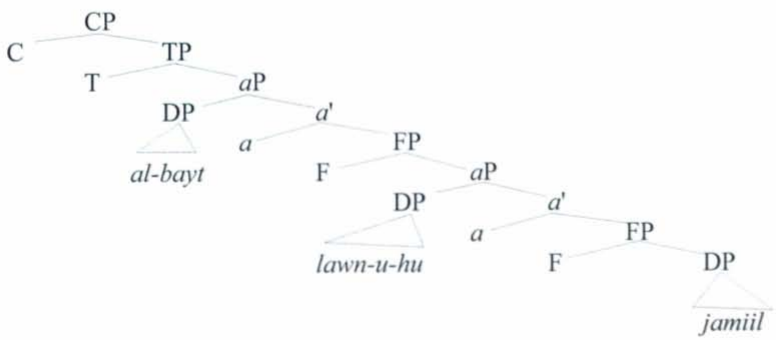
the following examples which contain the complementizer *ʔinna* 'that' and the copular verb *kaana* 'was':

(73) ʔinna al-bayt-a lawn-u-hu jamiil-u-n
Comp DEF-house-ACC colour-NOM-its beautiful(M.S.)-NOM-INDEF
'(it is confirmed) that the house's colour is beautiful'

(74) kaana al-bayt-u lawn-u-hu jamiil-u-n
was DEF-house-NOM colour-NOM-its beautiful(M.S.)-NOM-INDEF
'The house's colour was beautiful'

The disagreement in Case between the nouns *al-bayt* and *lawn* in (73) cannot be captured through multiple specs of a phasal head. Ignoring irrelevant details for now, the basic syntactic structure for (72) would be:[154]

(75)



154 The internal structure for the DP *lawn-u-hu* 'its colour' will be discussed in Chapter 5.

In (75), the first noun *al-bayt* 'DEF-house' occupies the spec position of the higher *a*P phase, while the second one (i.e., *lawn* 'colour') is placed in the spec position of the lower *a*P phase. This construction will be discussed in further detail in the next chapter. At this point, it suffices to know that recursive phasal construction is motivated by the data.

Summary

In this chapter, I have argued for the existence of Scan and Case-R as two essential operations for the syntactic computational system. Both operations exhibit some desirable and interesting implications not only for the FI model, but also for the Agree theory in general. It has become clear that Scan and Case-R help overcome the problems and inconsistencies found in current models of Agree, in particular the agreement issues Arabic adjectival phrases raise for these models. These operations conspire to produce convergent derivations by fulfilling the requirements of Agree in the sense of Chomsky (2005).

In particular, by producing linked elements, the operation Scan creates an efficient way of copying and transferring feature-values among the scanned elements. Also, it guides[155] and facilitates the Probe-Goal relation by first pinpointing potential Goals (i.e., assessing and gathering information) and secondly allowing value-sharing to proceed. Thus, the

155 Scan forces the conventional *downward* direction of probing. That is, it prevents *upward* probing, which is argued for in Baker (2008).

existence of Scan becomes necessary for the convergence of the derivation at LF as it helps in the valuation process of the uninterpretable features on lexical items. Similarly, the Case-R operation helps maintain the correct Case morphology by avoiding the possible overriding of Case values.

The operations Scan and Case-R, therefore, serve to satisfy the interface conditions by ensuring that only valued features are sent off to the interfaces. In this respect, their existence in the system conforms to the principle of Full Interpretation. Moreover, they can be seen as necessary tools which correspond to Chomsky's notion of language as a "good design"; thus, as far as the current Arabic data, the absence of these processes should result in a violation of the Agree process.

In general, the current approach to Agree conforms to the principle of Economy: it does not advocate for a lexicon with rich inflection, as the unvalued features are added in the numeration, not the lexicon (following Chomsky). In my analysis, I assume that neither adjectives nor pronouns of separation come from the lexicon with inherent φ-values; instead, these lexical items receive values for such features by virtue of them being connected to other lexical items, which inherently have φ-features (i.e., nouns). Moreover, the assumption that a single D head which bears definiteness feature is able to share a copy of its feature-value with another head D (that has an empty slot for the definiteness feature) shows conformity with the Economy principle; it seems more economical to assume a single source of features which can share copies of these features

with other lexical items than it is to assume the same set of features exists for each item in the lexicon.

Chapter 5

The Construct State

1. Introduction

This chapter begins by introducing the general semantic and syntactic properties of the Construct State (CS) construction in Arabic, and comparing these properties with the CS in another Semitic language (i.e., Modern Hebrew), for expository reasons.

In this chapter, I will overview some of the analyses proposed for the CS structure in the literature. Considering the enormity of the literature on CS, I will limit my overview to the works of Ritter (1988, 1991, 1995), Fassi-Fehri (1999), Benmamoun (2000, 2003), and Kremers (2003). These works will be followed by an Agree-based analysis for the Arabic CS construction. The proposed analysis extends the proposals developed for various adjective-containing syntactic structures in Arabic in the previous chapter.

The principal claim of this chapter is that agreement is syntactic not semantic; to put this differently, it is not specified by the semantics of predication. Specifically, it is argued that adjectives come from the lexicon with no φ-values, and that, consequently, agreement is determined in the syntax, not the semantics.

2. *The Construct State*

Arabic nouns can combine with prepositional or genitive/possessive complements. When a possessive complement is subcategorized for, a CS construction is formed. Generally, a sequence of two nouns, which are connected semantically, constitutes a CS construction. The first (or head) noun usually constitutes the possessee (or possessed) element (e.g., *kitaab* 'book' in (1)), and the second noun is the possessor of that element (e.g., *ar-rajul* 'DEF-man' in (1)):

(1) kitaab-u ar-rajul-i[156]
book-NOM DEF-man-GEN
'The man's book'

(2) kitaab-u rajul-i-n
book-NOM man-GEN-INDEF
'A man's book'

The special relationship between the two members of a CS is manifested by the second member carrying the genitive Case value, which is marked by the suffix *-i*, in addition to the (in)definiteness marker. The first member (i.e., the head noun), on the other hand, bears a nominative Case value in the absence of an *overt* Case assigner (e.g., a verb or complementizer).

156 This type of CSs will be referred to as *nominal* CS, which should be distinguished from another, *adjectival* CS, which will be introduced and discussed later in the chapter.

As far as the syntactic formation and the semantic interpretation of the CS, Modern Hebrew is one of Semitic languages which show striking similarities to MSA. Consider for example:

(3) beyt ha-mora
house the-teacher
'the teacher's house' (Ritter, 1995, p. 407)

Definiteness is marked on the possessor (i.e., *ha)* in *ha-mora* 'def-teacher'. No such specification for definiteness is marked on the head noun of the CS *beyt* 'house'.

(In)definiteness does not appear on the head noun of a CS either, as shown by the ungrammaticality of the following example:

(4) * **al**-kitaab-u al-walad-i
DEF-book-NOM DEF-boy-GEN

(5) *kitaab-u-**n** rajul-i-n
book-NOM-INDEF man-GEN-INDEF

The same restriction applies in the Modern Hebrew CS:

(6) *ha- beyt mora (Hazout, 2000, p. 32)
the house teacher

Notice that the head nouns *kitaab* 'book' in MSA and *beyt* 'house' in Modern Hebrew are not marked for definiteness (i.e., they cannot take the definite article *al-* or *ha-* nor can they take the indefinite marker *-n,* for Arabic). Thus, the absence of (in)definiteness markers begs the question: What exactly is the status of definiteness on the head noun in the CS?

One might suppose that the head noun in a CS is not actually marked for definiteness; however, the data shows that the definiteness of the whole CS is determined by that of the second part (i.e., the genitive-Case-bearing noun) of the CS construction.[157] One piece of evidence comes from the use of *attributive* adjectives in CSs (recall that these adjectives show full agreement with the nouns they modify):

(7) bayt-u ar-rajul-i aṭ-ṭawiil-u
house-NOM DEF-man-GEN DEF-tall-NOM
'the man's tall house'

(8) sayyar-at-u ar-rajul-i al-kabiir-at-u
car-F.S.-NOM DEF-man-GEN DEF-big-F.S.-NOM
'the man's big car'

157 This often referred to as *Definiteness Inheritance* (see, e.g., Fassi-Fehri, 1999; and Kremers, 2003, below).

(9) bayt-u rajul-i-n ṭawiil-u-n
house-NOM man-GEN-INDEF tall(M.S.)-NOM-INDEF
'a man's tall house'

(10) sayyar-at-u rajul-i-n kabiir-at-u-n
car-F.S.-NOM man-GEN-INDEF DEF-big-F.S.-NOM-INDEF
'a man's big car'

In these examples, the adjectives *ṭawiil* 'tall' and *kabiir* 'big' modify the head nouns of the CS *bayt* 'house' and *sayyar-ah* 'car', respectively. These adjectives agree with the head nouns in Case and φ-features; thus, logically, we could conclude that the adjectives in examples (7)-(10) also agree with the head nouns they modify in definiteness, although these nouns are not overtly marked for definiteness. Compare these examples with the following:

(11) sayyar-at-u ar-rajul-i aṭ-ṭawiil-i
car-F.S.-NOM DEF-man-GEN DEF-tall(M.S.)-GEN
'the tall man's car'

The attributive adjective *ṭawiil* 'tall(M.S.)' agrees with the possessor noun *ar-rajul* 'DEF-man' in φ-features (i.e., masculine and singular), Case (i.e., both bear the genitive Case value), and definiteness (i.e., both are definite).

A predicative adjective can be added to the attributive in (11), as in the following:

(12) sayyar-at-u ar-rajul-i aṭ-ṭawiil-i jadiid-at-u-n
car-F.S.-NOM DEF-man-GEN DEF-tall(M.S.)-GEN new-F.S.-NOM-INDEF
'The tall man's car is new'

The predicative adjective *jadiid* 'new' applies to the head noun *sayyarah* 'car' and agrees with it in φ-features (and Case), but not in definiteness.

Modern Hebrew shows the same pattern as can be seen in the following example from Hazout (2000, p. 31):

(13) beyt ha- mora ha- gadol
house the teacher the big
'The big house of the teacher'

The adjective *ha-gadol* 'def-big' modifies the head noun of the CS *beyt* 'house', and agrees with it in definiteness (as well as φ-features).

There is consensus[158] among researchers in both Arabic and Hebrew that nothing can intervene between the two members of which the CS is comprised, as can be seen from the ungrammaticality of the following examples:

158 However, under very limited rhetoric and literary conditions (e.g., swearing by God), the head noun of the CS is separated from its following part; for example, the term *wallahi* can intervene as in:
(i) haaða ɣulaam-u *wallahi* Zaid-in
This boy-NOM by Allah Zaid-GEN
'By Allah, this is Zaid's boy' (Al-Nadiri, 2005, p. 548)

(14)	*bayt-u	aṭ-ṭawiil-u	ar-rajul-i
	house-NOM	DEF-tall(M.S.)-NOM	DEF-man-GEN

(15)	*beyt	ha-	gadol	ha-	mora
	house	the-	big	the-	teacher

(Modern Hebrew)

The formation of a nominal CS leads to a change in both the phonology and the morphology of the head noun. That is, in MSA, a phonological rule of deletion applies to *tanwiin*[159] or the nasal ending *-n* (i.e., the indefinite marker *-n* in (16)), *nuun at-taθniyah* (i.e., *-n* in the dual form, as in (17)), and *nuun al-jamʕ* (i.e., *-n* in the plural form, as in (18)) from the head noun of the CS:

(16)	bayt-u-**n**	rajul-i-n	⟶	bayt-u rajul-i-n
	house-NOM-INDEF	man-GEN-INDEF		

(17)	bayt-aa**n**	ar-rajul-i	⟶	baytaa ar-rajul-i
	house-Dual(NOM)	DEF-man-GEN		

(18)	muʕallim-uun	ar-rajul-i	⟶	muʕallim-uu ar-rajul-i
	teacher-Pl.(NOM)	DEF-man-GEN		

Nominal CSs in Modern Hebrew show some morphophonological changes (see, e.g., Borer, 1996; Hazout, 2000). For example, the independent, free form of the word *bayit*

159 Also known as *nunnation*.

'house' becomes *beyt* in a CS form. Borer states that words in a CS perform as a single word with one primary stress, which falls on the second part of the CS (i.e., the possessor).

The morphophonological and definiteness facts of the CS have led some researchers to conclude that when a CS is formed, it constitutes a single phonological (i.e., prosodic) unit (see, e.g., Benmamoun, 2000, 2003, for Arabic).

Embedding in CSs is allowed in both Arabic and Modern Hebrew:

(19) bayt-u ʔuxt-i raʔiis-i al-wzaraaʔ-i
house-NOM sister-GEN prime-GEN DEF-ministers-GEN
'The Prime Minister's sister's house'

(20) bayt-u ʔuxt-i raʔiis-i al-wuzaraaʔ-i aṣ-ṣaɣiir-at-i al-jadiid-u
House-NOM sister-GEN prime-GEN DEF-minister-GEN DEF-little-F.S.-GEN DEF-new(M.S.)-NOM
'The Prime Minister's little sister's new house'

Consider the following example from Modern Hebrew:

(21) beyt mazakir mifleget ha- po'alim[160] (Hazout, 2000, p. 34)
house secretary party the workers
'the house of the secretary of the workers party'

160 The transliteration is that of Hazout (2000).

In Modern Hebrew, possessive relations can be represented by a postnominal PP headed by *Sel*[161] 'of':

(22) (ha-) bayit Sel (ha-) mora[162] (Ritter, 1988, p. 920)
the house of the teacher
'(the)/a house of (the)/a teacher's'

(23) tmunat ha- xamanyot Sel vangox
painting the sunflower of Van Gogh
'The painting of the sunflower by Van Gogh' (Shlonsky, 2004, p. 1504)

In Modern Hebrew, an embedded possessor, forming an NP/DP, can be preceded by the genitive marker *Sel* (of)[163]:

(24) beyt ha- mazkir Sel ha- miflaga (Hazout, 2000, p. 34)
house the secretary Sel the party
'The house of the secretary of the party'

When forming a CS, spoken varieties of Arabic show no major differences from MSA although Case and indefiniteness markers do not show up in a lot of these varieties. Consider the following examples:

161 This is known in the literature as the *free state* construction (see, e.g., Ritter, 1995; Shlonsky, 2004).
162 According to Ritter, the definiteness on the possessed noun *bayit* 'house' is independent of that on the possessor noun *mora* 'teacher'.
163 Ritter (1991) analyzes *Sel* as "a dummy case marker and not a preposition" (p. 43-44).

(25) beyt ar-rajjal (Asiri Arabic (AA))
house DEF-man
'The man's house'

(26) beet ar-raagil (Egyptian Arabic (EA))
house DEF-man
'The man's house'

(27) ktab l-wəld[164] (Moroccan Arabic (MA), from Benmamoun, 2000, p. 140)
book def-student
'The boy's book'

Notice that there is no corresponding element to Modern Hebrew's genitive marker *Sel* 'of' in Arabic. However, in addition to the usual formation of the CS that we have seen thus far, some contemporary spoken varieties of Arabic exploit certain particles to show possessiveness:

(28) as-siyyarah ħag-at-i (AA)
DEF-car(F.S.) property/right-F.S.-my
'My car'

(29) il-ʔaʕlaam bitaaʕit iš-šaʕb[165] (EA, from Holes, 2004, p. 209)
def-flags POSS-PTCLE-f. Def-people
'The people's flags'

164 The transliteration is Benmamoun's, however, glossing is mine.
165 Transliteration of this example is mine.

(30) lə-ktab dyal l-wəld
def-book of the-boy
'The boy's book' (MA, from Benmamoun, 2000, p. 140)

To use Holes' terminology, AA uses the possessive particle *ħaq* meaning 'property/right' before the *owner/possessor* of a certain item or notion. Likewise, EA and MA use the possessive particles *bitaaʕ* 'of' and *dyal* 'of', respectively, to indicate possessiveness.

Having highlighted the basic characteristics of the CS in Arabic (and Modern Hebrew, for comparison), I now consider some of the analyses proposed in the literature to account for this construction, preparatory to introducing an Agree-based analysis.

2.1 Ritter (1988, 1991, 1995)

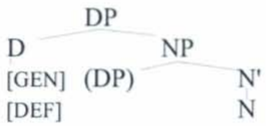
Within the Government and Binding theory, Ritter (1988) proposes an analysis of nominal CSs in Modern Hebrew. Ritter states that the surface order of Noun Subject Object (NSO) in CSs is derived from the basic order of SNO (i.e., via movement of the head noun (N) across the possessor):

(31) $beyt_i$ ha-mora t_i
house the-teacher
'the teacher's house' (Ritter, 1995, p. 407)

Ritter argues that NPs in Modern Hebrew are DPs, and that the landing site for the moved *beyt* 'house' in (31) is the head D (i.e., in a head-to-head movement). By analogy with verb raising in INFL structures, Ritter argues that N in CSs raises to D, and like INFL, D can assign structural Case[166] to the subject of a CS.

Ritter (1988, p. 919), then, proposes the following basic configuration for Modern Hebrew's DPs (both CS and non-CS constructions): (Notice that in CSs, the head noun N raises to D[167])

(32)



The head of the CS (e.g., *beyt* 'house' in (31)) is not inherently specified for definiteness, meaning that it must get it from another element in the structure. Ritter, thus, proposes that the genitive phrase (e.g., *ha-mora* 'def-teacher' in (31)) originates in spec NP; there, N acquires definiteness from its spec (i.e., in a spec-head relation). Next, N raises to D to convey the (in)definiteness specification to the head of DP. From DP, the (in)definiteness

166 According to Ritter, the head D assigns genitive Case if it is specified for an abstract Case-assigner, which she labels [GEN] (1988, p. 919-920).

167 Raising of the head noun N to D has also been proposed (see, e.g., Borer, 1996; and Longobardi, 2001). These researchers have argued that N raising to D is essential as it obtains the definiteness inheritance. Raising to D in CS is motivated (and attracted) by a strong feature of definiteness on the head D, which must be interpreted. To Borer (1999, p. 76), [±definite] feature on the head N of a CS (i.e., in its basic position) is not lexically specified on N, meaning that it has to raise in order to get this feature.

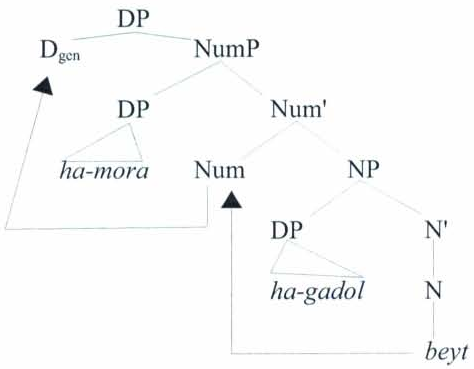
feature percolates to the maximal projection.

Ritter (1991) reanalyzes nominal CSs in Modern Hebrew, as in (33), and proposes that the syntactic structure of all NPs contains a NUMP projection (in addition to a DP). Under this analysis, the head of DP (heading the CS) is an abstract Case assigner[168] (i.e., D_{gen}).

(33) beyt ha- mora ha- gadol (p. 46)
house the-teacher the-big
'The teacher's big house'

Based on considerations of Case, definiteness, and word order (i.e., the possessor *ha-mora* 'def-teacher' appears before the adjective *ha-gadol* 'def-big'), Ritter concludes that the possessor occupies the spec position of NumP:

(34)



168 For Ritter (1991), the definite article *ha* is a Det which lacks the ability to assign genitive Cases. Under this analysis, and based on the fact that CSs are not headed by the definite *-ha*, Ritter concludes both *ha* and D_{gen} are in complementary distribution.

The correct word order is derived when the head noun *beyt* raises to the head Num, and then to D_{gen}. In situ, the possessor *ha-mora* 'def-teacher' in spec NumP receives a genitive Case from the head D_{gen}.

It is not obvious how, in (34), the adjective *ha-gadol* 'def-big' in spec NP receives Case; nor is it obvious what type of Case, if any, it would receive? Likewise, it is not clear how the head noun *beyt* 'house' receives Case.

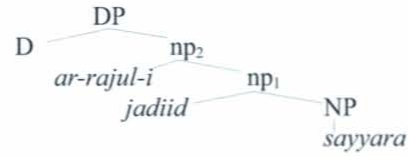
2.2 Fassi-Fehri (1999)

Fassi-Fehri (1999) argues that the derivation of the Arabic CS in (35) involves movement of the head noun *sayyara* 'car' to D, and that the possessor *ar-rajul* 'def-man' originates higher than the adjective *jadiid* 'new':

(35)	ra?ay-tu	sayyar-at-a	ar-rajul-i	al-jadiid-at-a
	saw-I	car-F.S.-ACC	DEF-man-GEN	DEF-new-F.S.-ACC
	'I saw the man's new car'			

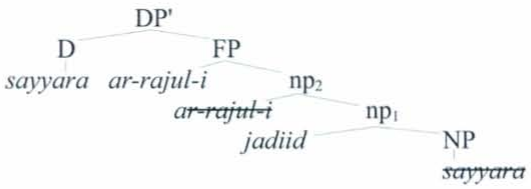
Fassi-Fehri (1999, p. 126) provides, in (36), what he takes to be the original structure for (35): (modified from Fassi-Fehri)

(36)



In (36), the possessor *ar-rajul* 'DEF-man' is placed in spec of np_2, while the modifying adjective for the head noun *sayyara* 'car' is placed in spec of np_1. Various others (e.g., Borer, 1996; Ritter, 1991) have proposed the derivation presented in (37) for (36) (modified from Fassi-Fehri, 1999, p. 126):[169]

(37)

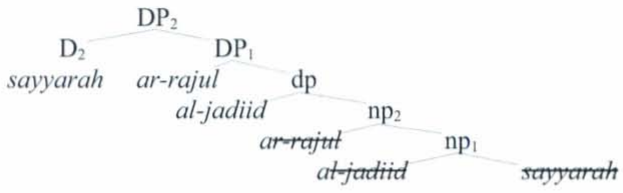


In (37), the possessor noun *ar-rajul* 'DEF-man' raises to spec FP, and the head noun *sayyara* 'car' raises to D. However, Fassi-Fehri (1999) points out that as far as how the other characteristics of a CS (e.g., definiteness inheritance, checking/valuation of the genitive Case, etc) are obtained, there is less agreement among researchers (e.g., Borer, 1996; Ritter, 1991). Thus, to overcome such disagreements, Fassi-Fehri (1999) adopts Chomsky's (1995) feature-checking theory and in an attempt to provide an account for Arabic CSs. In his system, the overall derivation of the CS in example (35) would look

169 According to Fassi-Fehri (1999), the use of FP in (37) is neutral, as far as the identity of the category that hosts the possessor. This category has been described as an AgrP in Longobardi (1996); but, as a PossP in Fassi-Fehri (1993).

like the following:[170] (Modified from Fassi-Fehri, 1999, p. 129)

(38)



According to Fassi-Fehri, the head noun *sayyara* 'car' first raises to D_1. The possessor noun *ar-rajul* 'DEF-man' raises to spec DP_1. There, the possessor transmits its definiteness feature to the head D_1 and obviously to the head noun in D_1 (in a spec-head configuration). Next, the head noun *sayyarah* 'car' is attracted by a strong Case feature on D_2, which must be checked, thus causing the head noun to raise further to D_2. This way, the head noun *sayyarah* 'car' inherits the definiteness feature from the possessor, and receives Case.

As to how the genitive Case on the possessor is checked, Fassi-Fehri assumes that it occurs at the PF level at "the lowest (segment of) DP projection" (p. 146). The possessor can raise twice: Once for checking the DEF feature, and again to check the genitive Case feature.

While agreement (in φ-features and definiteness) obtained between the head noun

170 Based on Fassi-Fehri's External Spec Derivation, the dp category is introduced to host the raised AP.

sayyarah 'car(F.S.) and the modifying adjective *al-jadiid-at* 'DEF-new-F.S.' is not clearly articulated in Fassi-Fehri's analysis, it could be inferred to have taken place in the original position in (36) (in a spec-head configuration). However, if correct, this is only possible for φ-agreement, but not for definiteness (given that the possessor *ar-rajul* 'DEF-man' is the part of the CS that determines (in)definiteness of the CS). Thus, definiteness agreement between the head noun and its modifying adjective must be elaborated further.

By the same token, this analysis does not explain how agreement in Case (i.e., accusative) between the head noun and its modifying adjective is obtained, especially if we consider that the functional head (i.e., the verb *raʔa* 'saw' in (35)) which is responsible for these Cases is introduced later in the derivation.

2.3 Benmamoun (2000, 2003)

Building on the observation that certain phonological and morphological changes accompany the formation of a CS in Semitic languages (particularly in Hebrew and Arabic,[171]) Benmamoun argues, following Borer (1996), that the head noun of the CS forms "a prosodic unit (a compound) combining the members of the [...] N+NP sequence[...]" (i.e., forms a single prosodic unit with the following, genitive part) (2003,

171 See the introduction of this section for characterization of such changes.

p. 754).[172]

To account for the fact that (in)definiteness on the first part of the CS is determined by the second part, Benmamoun (2000) states that being in a single prosodic unit allows the (in)definiteness feature on one member (i.e., the genitive noun) to be spelled out by the other (i.e., the head noun). According to Benmamoun (2000, p. 153), "spelling-out (in)definiteness [on the head, first noun of the CS] by a morpheme becomes redundant," and explains that merger prevents the morphological realization of the (in)definiteness on this first part of the CS.

Note, however, that unlike Borer (1996), who states that the first member of the CS lacks specification for the (in)definiteness feature, and as such, must receive this feature by percolation (after merger), Benmamoun assumes that each member comes specified for the (in)definiteness feature, and argues that the distribution of (in)definiteness markers (between members of the CS) applies in the morphology (i.e., the component where the members of the CS merge.[173])

Following Ritter (1991), Benmamoun (2000, p. 154) proposes the representation in (40) for the CS in (39):

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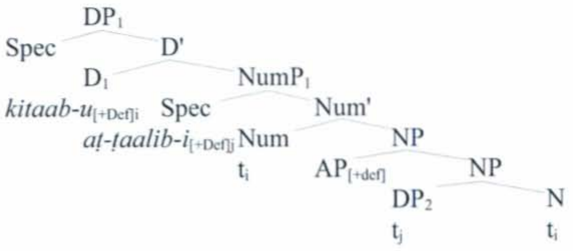
172 According to Benmamoun (2000), members of the CS merge "post-syntactically" (p. 152) (i.e., in the morphology).

173 Note that for (in)definiteness on the adjectives in (40), Benmamoun (p. 154) states that they are spelled out by a "morphological affix" since they are not in the CS (i.e., following Borer's, 1995 and Ritter's, 1991 conclusion that adjectives are left adjoined to NP (f.n, 4. p. 165)).

(39) kitaab-u aṭ-ṭaalib-i al-jadiid-u
book-nom DEF-student-GEN DEF-new(M.S.)-NOM
'The student's new book'

(40)



Borer's (1996) as well as Benmamoun's (2000, 2003) arguments that CSs form a single phonological (prosodic) unit can be challenged on empirical grounds; for example, in Arabic, it is not ungrammatical for a syntactic element to intervene between the head noun and its following, genitive noun as can be seen in example (41), which was first introduced in fn. 158 on page 248.

(41) haaða ɣulaam-u wallahi Zaid-in
This boy-NOM by Allah Zaid-GEN
'By Allah, this is Zaid's boy' (Al-Nadiri, 2005, p. 548)

Under very limited rhetoric and literary conditions (e.g., swearing by God), the head noun of the CS is separated from its following part. This fact casts doubts on the validity of the

prosodic unit analysis of CSs.

In addition, Benmamoun's claims that the members of the CS merge in the morphology, and that spell-out of (in)definiteness markers on the first part of the CS is "redundant" raise one issue: It is not clear why the (in)definiteness on the first part of the CS, which is supposed to be determined by the second part, does not show up (morphologically) on this part; thus, a better explanation is required.

2.4 Kremers (2003)

For Arabic CSs, Kremers (2003) argues that such constructions contain a functional projection (i.e., POSSP) which is responsible for the genitive Case value on the possessor. The head Poss of this projection contains the feature POSS, which, like the feature TENSE of the head Tense, can come in two forms: [±POSS]. In other words, when the feature TENSE has the value [+FINITE], it bears an additional set of unvalued φ-features, which must be valued in the course of the derivation. By analogy, when the feature POSS bears the value [+POSS], a set of unvalued φ-features is also borne by the head Poss.[174]

174 A different Antisymmetric-based analysis for Semitic CSs has been developed by Shlonsky (2004). In this analysis, contrary to the traditional views which assume that the head noun N of a CS raises to D, Shlonsky proposes instead a phrasal movement in Semitic CSs. According to Shlonsky, the head noun in a CS is the source for the genitive Case value on its complement; thus, explaining the impossibility of the intervention of a syntactic element such as an AP (recall that adjectives follow the complement noun in a CS). In chapter 3, we have seen that adjectives (in Shlonsky's system) originate in the specifier position of an XP which contains an NP; therefore, under such a phrasal movement analysis, the entire CS (NP) raises above this adjective in the course of the derivation.

The presumed association between φ-features and the feature POSS has been observed in various languages.[175] Consider, for instance, the following example from Hungarian (from Szabolcsi, 1994, as cited in Kremers, 2003), where the possessive marker *-ja* agrees with the possessor *fiú* 'boy' in φ-features (i.e., third person singular):

(42) a fiú kalap-ja
the boy.NOM hat-POSS.3SG
'the boy's hat'

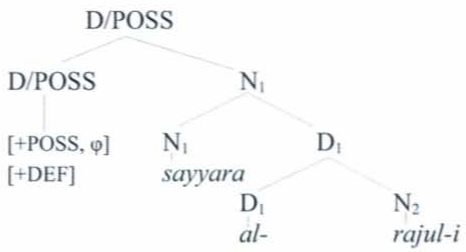
Following Chomsky (1995), Kremers (2003) states that having an unvalued set of φ-features, the head Poss becomes active, and as such, Poss can participate in an Agree relation by seeking a Goal (i.e., the complement of the noun), and values a genitive Case value on this complement.

To account for the fact that the head noun of a CS always agrees with its noun complement in definiteness, Kremers (2003) proposes that a Poss head with the value [-POSS] indicates that the head noun does not take a genitive complement, and that the DEFINITENESS feature enters the derivation with a value (i.e., either definite or indefinite). However, when the Poss head has a [+POSS] value, the head noun must take a noun complement, and the DEFINITENESS feature enters the derivation with no value.

175 See, for example, Mayan and Turkish (Abney, 1987).

Kremers then proposes that in Arabic CS constructions a hybrid functional head which combines the heads D and Poss exists. This hybrid head projects for DEFINITENESS and POSS features together. Kremers thus proposes the following syntactic tree (p. 41):

(43)



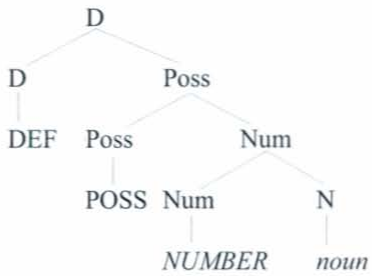
Under the representation in (43), the [+POSS] forces the DEFINITENESS feature to remain unvalued. Having unvalued φ-features, the Poss head probes for the complement DP (which also has a valued DEF feature) as its Goal. Under Agree with this DP, the unvalued φ-features on the head Poss as well as the DEF feature get valued. This way, the head noun *sayyara* 'car' inherits the definiteness of the complement *al-rajul* 'DEF-man'.

It is not clear, however, why the Probe skipped over the head noun *sayyara* 'car', considering that it bears valued φ-features, and as such, can be a perfect goal for the D/POSS probe.

Kremers (2003) argues that in an Arabic noun phrase, the feature DEFINITENESS is

projected by the head D, the feature POSS is projected by the head Poss, and the feature [Number] is also projected by the head NUM as in (44) (p. 56):

(44)

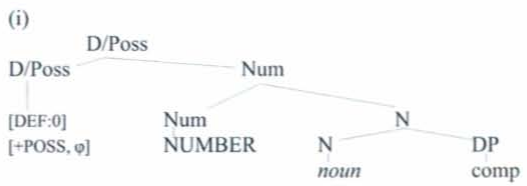


Notice that in (44), the noun does not take a complement; accordingly, the Poss head bears a [-POSS] feature.[176]

In the following section, I will build on the works proposed for Semitic nominal CSs (e.g., Benmamoun, 2000; Fassi-Fehri, 1999; Ritter, 1988-1995), and extend the developed ideas in the current approach of Agree to Arabic nominal CSs. Specifically, the analysis to be proposed implements, respectively, Chomsky's (2001) and (2005) phase- and Agree-

176 However, when the noun takes a complement, the Poss head will have the feature [+POSS], which will also have a set of unvalued φ-features and form a hybrid category with the head D as in (i) (Kremers, 2003, p. 57):

(i)



based theoretic approaches. As will become clear, the analysis will set the basis on which more adjective-containing constructions (e.g., The Indirect Attribute and the Adjectival Construct in sections 2. and 3. of chapter 6) will be investigated.

3. *Agree-based analysis for Arabic Construct State*

This section provides an Agree-based analysis which builds on the arguments developed in the last chapter. The proposed analysis follows the general trend which seeks to explain the states of (dis)agreement in Case, φ-features, and definiteness between a noun and its relating adjective(s) in a CS construction.

Let us consider the following example of a CS construction with the predicative adjective *kabiir* 'big(M.S.)' applying to the head noun *bayt* 'house' of the CS *bayt-u ar-rajul-i* 'the man's house':

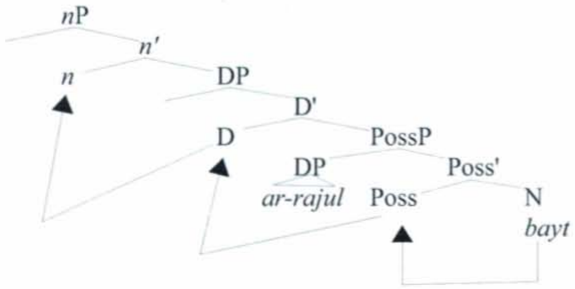
(45)	bayt-u	ar-rajul-i	kabiir-u-n
	house-NOM	DEF-man-GEN	big(M.S.)-NOM-INDEF
	'the man's house is big'		

I will argue that the genitive Case value on the possessor noun *ar-rajul* 'DEF-man' in (45)

is valued by a light *n* head (in a Probe-Goal fashion). Following Kremers (2003), I will argue that this genitive Case is structural and must be valued by a functional head. As we have seen, the proposal that such a functional head (responsible for the genitive Case in CSs) exists is not novel; in fact, researchers (e.g., Longobardi, 1996) argue that a CS contains an Agr head, presupposing that a CS is an AgrP. Other researchers such as Fassi-Fehri (1993) and Kremers (2003) have proposed that a head termed Poss exists in CS constructions, and is responsible for the genitive Case value on the possessor noun; whereas Ritter (1991) has ascribed this genitive Case to the head D_{gen}, as has been demonstrated.

To provide an Agree-based analysis for nominal CS constructions in Arabic, I begin by proposing the following internal structure for the CS in (46), with the arrows depicting multiple movements of the head noun, as will further be illustrated:

(46)



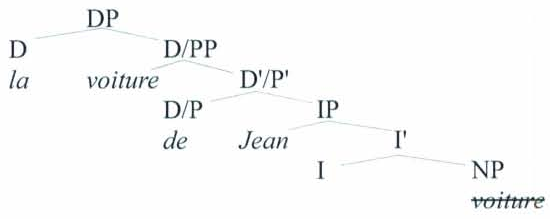
In (46), the head noun *bayt* 'house' originates as a complement for the head[177] Poss. Semantically, I take this head to express *possessiveness*[178] in this structure, and syntactically, to host the possessor noun *ar-rajul* 'DEF-man' in its spec.

In an unrelated language, for instance, Kayne (1994, p. 102), assuming that DP is similar to a CP, analyzes possessiveness in the following (French) example as a DP:

(47) la $[_{D/PP}$ voiture$_j$ [de $[_{IP}$ Jean $[I^0$ [e]$_j$ ...
the car of Jean

In this DP, the possessed phrase *voiture* raises to spec[179] D/PP (across the subject (the possessor) *Jean*, which is Case-licensed in situ):

(48)



According to Kayne, the head 'I' is "an abstract counterpart to English *'s*, providing the possessive interpretation within IP" (p. 102).

177 It will be shown that this head is different from that in Kremers (2003), and Fassi-Fehri (1993). To them, it is this head that assigns/values the genitive Case on the possessor noun.

178 Notice that the existence of the head Poss does not necessarily indicate that of ownership; there are different types of constructions in Arabic which are termed *ʔiḍafah* 'construct state' by traditional grammarians based on the existence of the genitive Case. However, in this section, the head Poss encodes *possessiveness*.

179 To Kayne, the D/P symbol is used to present the prepositional *de*.

That said, the basic word order of the members of the CS in (46) resembles what researchers such as Borer (1996) and Ritter (1988) have proposed for Modern Hebrew, and Benmamoun (2000) and Fassi-Fehri (1999) for Arabic. It basically entails that the head noun of a CS originates lower than the possessor, but raises across the possessor noun to provide the correct word order, and to achieve (in)definiteness inheritance (i.e., (in)definiteness on the head noun is determined by that of the possessor, genitive noun), as has been demonstrated.

Nevertheless, these researchers have shown less agreement concerning the original position of the possessor: It is argued to have originated in spec NumP (e.g., Ritter, 1991), in spec np_2 (e.g., Fassi-Fehri, 1999), and in spec NP (e.g., Benmamoun, 2000). Moreover, a further disagreement is noticed among these researchers as far as the movement steps the head noun takes and the landing sites it moves to before reaching its final destination: The head noun raises to the Num head before it reaches the head D_{gen} (or D_1) in Ritter (1991) and Benmamoun (2000), respectively; whereas in Fassi-Fehri (1999), the head noun raises to D_1 and D_2.

In (46), the surface structure of the CS *bayt-u ar-rajul-i* is obtained through consecutive movements of the head noun *bayt* 'house': (a) to the head Poss, (b) to the head D where it picks up the (in)definiteness feature on the possessor *ar-rajul* 'DEF-man' (which is definite in this example), and (c) to the head *n* of *n*P. Movement of the head noun *bayt* is

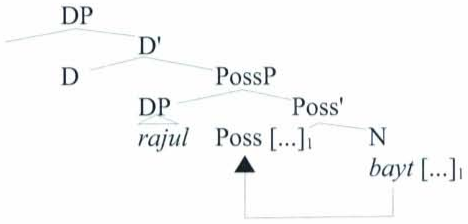
analogous to that of a lexical verb, which raises to the functional head *v* and then to T in a finite structure. Furthermore, following Kayne's (1994) argument, the interpretation of possessiveness in the Arabic CS in (46) could be argued to be determined within the PossP.

Crucial to these movements is the notion that they apply prior to FI and/or Agree. This point conforms to Chomsky's (2005) conjecture that no operation should occur prior to the introduction of phasal heads. However, recall that in the current approach to Agree an exception has been made. That is, following the assumption that the operation Scan applies concurrently with Merge, Scan will still operate at the same time these movements of the head noun *bayt* occur; however, in some constructions, the application of the operation Scan must be parametrized, as will be shown in chapter 6.

For concreteness, then, the derivation of the CS *bayt-u ar-rajul* 'the man's house' in (45) proceeds as follows. Once the Poss head enters the derivation, it Scans the head noun N, and a link is established between the two elements[180] (i.e., $[...]_1$), and the head noun *bayt* 'house' raises to Poss:

180 Notice that under Scan, Poss can create a link with *bayt* as shown in (49), and as a side-effect, the head noun might thought of becoming identified as a possessed element. This step, however, does not prevent *bayt* from raising to Poss.

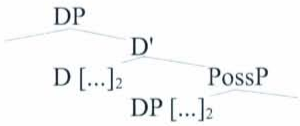
(49)



Note that N is not headed by a D head, indicating that its (in)definiteness cannot be determined at this point in the derivation.

Next, once the D head of DP enters the derivation and selects PossP as its complement, the head noun *bayt* 'house' raises to it. Here, I will assume that this D head comes from the lexicon with an empty slot for the definiteness feature (i.e., $[...]_{Def}$). Under Scan, D establishes a link with the possessor DP *ar-rajul* 'DEF-man' in spec PossP, and the [definite] value for the definiteness feature on the possessor is shared with the head D (to which the head noun *bayt* has raised), as in (50):

(50)



This way, the definiteness inheritance notion (where the possessor, genitive noun determines the (in)definiteness on the head noun) in Arabic CS is obtained. Note, however, that unlike other instances of D (i.e., Ds heading adjectives), where the value of

(in)definiteness feature on a noun gets morphologically realized on that D head, this is not possible in nominal[181] CS constructions as the ungrammaticality of examples (4) and (5) (repeated as (51) and (52)) reveals:

(51)	* **al**-kitaab-u	al-walad-i
	DEF-book-NOM	DEF-boy-GEN

(52)	*kitaab-u-**n**	rajul-i-n
	book-NOM-INDEF	man-GEN-INDEF

Thus, the D head in (50) receives an abstract [definite] value, which remains morphologically unrealized (at least in nominal CSs).

The head noun *bayt* 'house' then continues to raise to the head *n*. Movement of the head noun to *n* can be said to take place immediately upon the head *n* entering the derivation.

For consistency with the FI model adopted in the current thesis, I will assume that the *n*P (i.e., the CS) is phasal. Being phasal, the head *n* of *n*P bears a valued Case feature (with a genitive Case value) in addition to an unvalued set of φ-features. Under the proposed version of FI, the head *n* transfers its features to a proxy head. The head D of DP functions as such a proxy head, and the complex probe *n*-D is formed. Under Agree, the probe *n*-D probes the DP *ar-rajul* 'DEF-man' in spec PossP and enters into an Agree

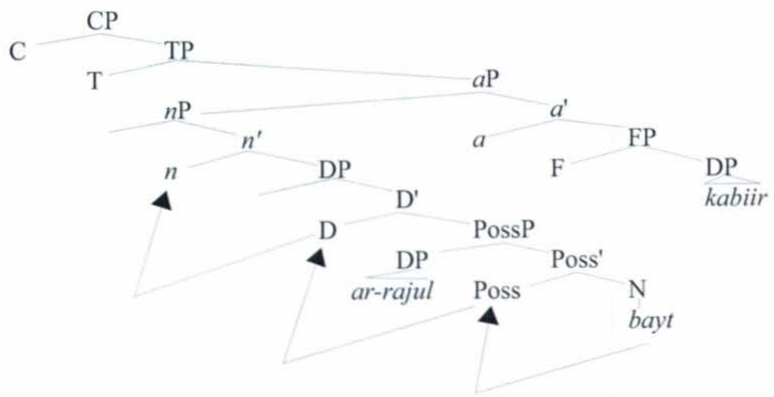
181 In section 3. of chapter 6, we shall see another type of CS (i.e., Adjectival Construct), where the (in)definiteness value is morphologically reflected on the same D head in (50).

relation with it by valuing its unvalued Case (genitive), and at the same time, receiving valuation of its unvalued set of φ-features.

Up to this point in the derivation, the head noun *bayt* 'house' bears an abstract [definite] value and unvalued Case feature (i.e., [*u*Case]). It will be shown that the nominative Case value on this noun is valued via Agree with the Probe C-T.

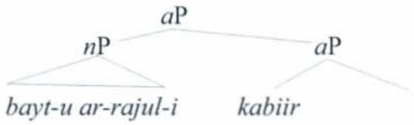
Having illustrated the internal structure of the CS, I now illustrate the complete structure for (45). In (45), the predicative adjective *kabiir* 'big(M.S.) applies to the head noun *bayt* 'house', and agrees with it in [Number] and [Gender] (and in this example, Case). I propose that the CS *bayt-u ar-rajul-i* 'the man's house' (represented by *n*P) originates in the spec position of adjectival, phasal *a*P. Thus, the complete structure for the construction in (45) is:

(53)



The predicative adjective originates under the *a*P phase as shown in (53). The Probe *a*-F probes *kabiir* 'big' and reserves its unvalued Case as nominative. The EF on the *a*-F Probe raises *kabiir* to the inner spec of *a*P:

(54)



Being close to the head noun *bayt* 'house' of the CS, the adjective *kabiir* shares a copy of the φ-feature values of the head noun *bayt* (in *n*). Particularly, either the head T of TP Scans *n*P (and possibly the head *n*) as well as the raised adjective in spec *a*P, or the CS (*n*P) *itself* Scans the raised A; whichever is the correct mechanism, being in a single link, value-sharing becomes possible between the head noun *bayt* and the adjective *kabiir.*

Inside the CP phase, the phasal head C selects T and transfers all of its features to T. The Probe C-T probes the head noun *bayt* 'house' in *n*P[182] (and possibly the raised adjective), and values the unvalued Case feature on *bayt* (nominative); simultaneously, the Probe receives valuation for its unvalued φ-features. Recall that under Case-R, the adjective *kabiir* will not receive a different Case value (other than that reserved by the *a*-F Probe), when probed by the C-T Probe. As a result, the derivation then converges at the LF.

182 Recall that the head noun (in *n*) is accessible to the C-T Probe, under the PIC.

3.1 With the complementizer ʔinna 'that'

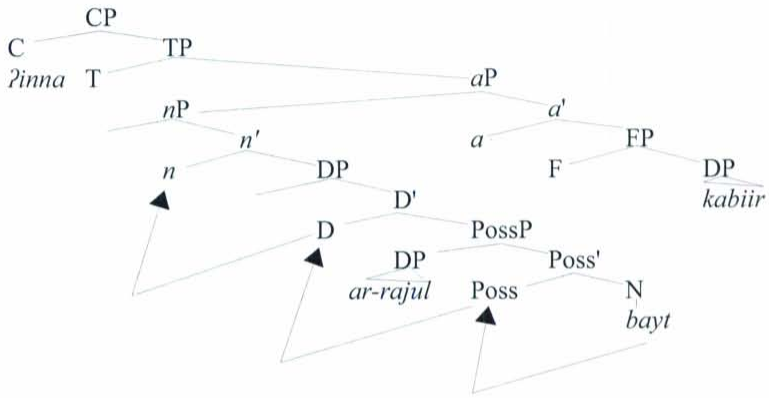
Consider the case when the CS is introduced by the complementizer *ʔinna* 'that':

(55) ʔinna bayt-a ar-rajul-i kabiir-u-n
Comp house-ACC DEF-man-GEN big(M.S.)-NOM-INDEF
'(It is confirmed) that the man's house if big'

When the CS is preceded by the complementizer *ʔinna* 'that', the head noun bears an accusative Case value by the complementizer.

The analysis proposed for the example in (45) can straightforwardly be extended to (55), as the representation in (56) shows:

(56)



As previously argued, the head noun of the CS *bayt* 'house' raises multiply to the head *n* of the *n*P, where it can be probed by the C-T Probe, and thus, receives valuation for its unvalued Case feature (i.e., accusative by *ʔinna*). Likewise, the head noun receives a copy of the (in)definiteness value of the possessor *ar-rajul* 'DEF-man', given that the (in)definiteness of the whole CS is determined by that of the possessor.

The unvalued Case feature on the adjective *kabiir* 'big' is reserved by the *a*-F probe (i.e., nominative); as well, the adjective is raised to the inner spec of *a*P. There, it can share a copy of the φ-values of the head noun *bayt* 'house' (recall that the adjective agrees with the head noun in φ-features).

Internally, the possessor noun *ar-rajul* 'DEF-man' receives a genitive Case value due to an Agree relation with the Probe *n*-D, as has been demonstrated. Similarly, this Probe receives valuation for its unvalued φ-features, as a consequence of Agree. The overall result is a convergent derivation at the LF.

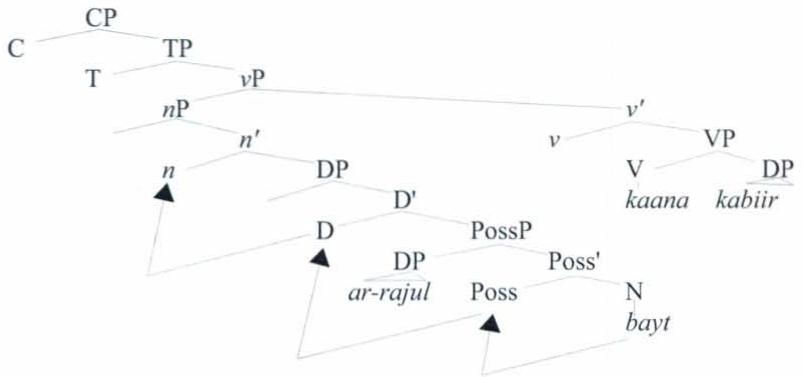
3.2 With the copular verb *kaana* 'was'

The CS can also be preceded by verbal elements. Consider how the CS interacts with the verbal copula *kaana* 'was':

(57) kaana bayt-u ar-rajul-i kabiir-a-n
was house-NOM DEF-man-GEN big(M.S.)-ACC-INDEF
'The man's house was big'

The predicative adjective *kabiir* in (57) bears an accusative Case value, while the head noun of the CS *bayt*, with which the adjective agrees in φ-features, bears a nominative one. To account for these facts, I assume the following representation:

(58)



In this representation, the *n*P (CS) *bayt-u ar-rajul-i* 'the man's house' originates in spec of the verbal phase *v*P. The adjective *kabiir* 'big' is the complement of the lexical head V *kaana*.

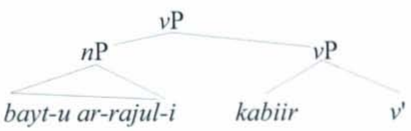
To explain how the derivation proceeds in this construction, let us begin by considering the derivation inside the CS (headed by *n*P). The head noun first moves to the head Poss,

and to the head D before it stops in the phasal head *n* of *n*P. This type of movement occurs prior to FI and/or Agree takes place inside the phasal *n*P.

Upon raising to the head D, the head noun *bayt* 'house' shares a copy of the (in)definiteness value on the possessor noun *ar-rajul* 'DEF-man', which must be [definite] in this case. Being in *n*, the head noun can be probed by the C-T probe, which explains the nominative Case value on the noun *bayt* 'house'.

As for the predicative adjective *kabiir* 'big', it is probed by the *v*-V Probe. Knowing that the adjective bears no φ-features values, Agree is not complete; however, under Case-R, the unvalued Case value on the adjective is reserved (accusative by the *v*-V probe). The EF on this Probe raises the adjective to the inner spec of *v*P, as in:

(59)



Under Scan, the head T Scans both *n*P and the raised adjective (or alternatively, *n*P Scans the raised adjective). This allows value-sharing to proceed between the adjective and the head noun *bayt* 'house' (recall that the adjective agrees with *bayt* in φ-features).

As demonstrated in chapter 4, the adjective shares a copy of the received values with its original copy (under DP). This allows for the reserved Case on the adjective to be morphologically realized (accusative), and at the same time, helps the *v*-V probe to receive valuation for its unvalued φ-features.

At the CP level, the phasal head C selects T, and transfers all of its features to T. The complex C-T Probe probes the head noun *bayt* (and possibly the raised the adjective in spec *v*P). Under Agree, the unvalued Case feature on the head noun *bayt* receives valuation, and at the same time, the unvalued φ-features on the C-T Probe become valued. Recall that Case-R prevents the adjective from receiving another Case value, thus no Case-overlapping is expected.

3.3 An attributive adjective modifying the possessor noun

Next, let us consider when the possessor noun in (45) is modified by an attributive adjective as in:

(60) bayt-u ar-rajul-i aṭ-ṭawiil-i kabiir-u-n
house-NOM DEF-man-GEN DEF-tall(M.S.)-GEN big(M.S.)-NOM-INDEF
'The tall man's house is big'

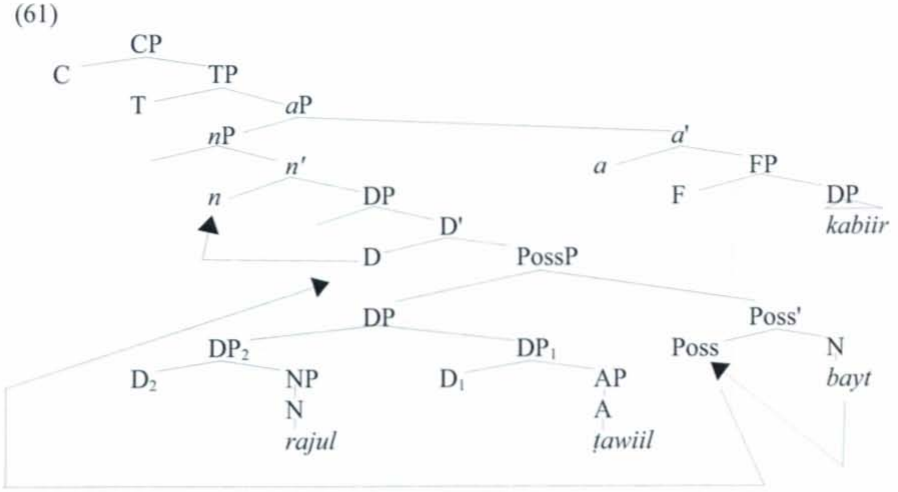
There are two adjectives in (60): *ṭawiil* 'tall' and *kabiir* 'big'. The adjective *ṭawiil* is an

attributive adjective, whereas *kabiir* 'big' is predicative. Notice that the Case values on the adjectives are different. The attributive adjective *ṭawiil* 'tall' modifies the noun *rajul* 'man' and agrees with it in φ-feature, Case (i.e., both bear genitive Case values), and definiteness.

Recall that definiteness on the head noun *bayt* is determined by the that of the noun *ar-rajul* (as explained before. By extension, then, definiteness features on *bayt-u* 'house' and *aṭ-ṭawiil-i* 'DEF-tall' in (60) are also determined by that of the possessor noun *ar-rajul*.

As we have seen earlier, the predicative adjective *kabiir* 'big' agrees with the noun *bayt* 'house' in φ-features. Notice, however, that although both elements bear nominative values, the Probes responsible for these values are different. For the structure in (60), I assume the following representation:

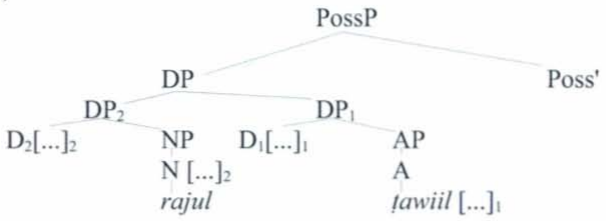
(61)



In (61), the CS (headed by the *n*P) originates in the spec position of *a*P. Within *n*P, I will continue to assume that the attributive adjective *ṭawiil* 'tall' (under DP_1) adjoins to the possessor noun *rajul* 'man' (i.e., DP_2), and the whole DP containing the possessor *rajul* and its modifying adjective *ṭawiil* is located in the spec position of the PossP.

Under Scan, the head D_1 Scans the adjective *ṭawiil* 'tall', and a link is created between the two elements. Likewise, the head D_2 Scans N *rajul* 'man', and a new link (i.e., $[...]_2$) is established. These links allow the noun *rajul* to share a copy of its φ-feature values (i.e., [masculine] and [singular]) as well as definiteness with the adjective *ṭawiil*, as in:

(62)



The derivation of the CS proceeds when the head noun *bayt* 'house' moves to the head Poss, the head D, and to the phasal head *n*. Once *n* enters the derivation, it selects the proxy head D, which already contains the (in)definiteness value shared with the possessor *ar-rajul* 'DEF-man', and the complex Probe *n*-D is formed.

The *n*-D Probe probes the possessor *ar-rajul* 'DEF-man', and the adjective *ṭawiil* 'tall' (through Scan). As a result of Agree, the Probe receives valuation for its unvalued φ-features, and at the same time, the possessor and the adjective receive valuation for their unvalued Case feature (genitive) by this Probe.

The predicative adjective *kabiir* 'big' receives valuation for its [*u*Case] feature by the Probe *a*-F. The EF on the *a*-F probe causes the adjective to raise to the inner spec of *a*P where it shares a copy of the φ-feature values on the head noun *bayt* 'house', as previously demonstrated.

The nominative Case value on the head noun *bayt* 'house' reflects a successful Agree

relation with the Probe C-T, which also receives valuation for its unvalued φ-features from the noun *bayt*. The result is a convergent derivation at the LF.

After making the necessary changes (i.e., including the DP *tawiil* 'tall' as a complement to the noun *rajul* 'man'), the representations in (58) and (61) above can be extended to the following examples, respectively:

(63) ʔinna bayt-a ar-rajul-i aṭ-ṭawiil-i kabiir-u-n
Comp house-ACC DEF-man-GEN DEF-tall(M.S.)-GEN big(M.S.)-NOM-INDEF
'(It is confirmed) that the tall man's house is big'

(64) kaana bayt-u ar-rajul-i aṭ-ṭawiil-i kabiir-a-n
was house-NOM DEF-man-GEN DEF-tall(M.S.)-GEN big(M.S.)-ACC-INDEF
'The tall mans's house was big'

3.4 An attributive adjective modifying the head noun

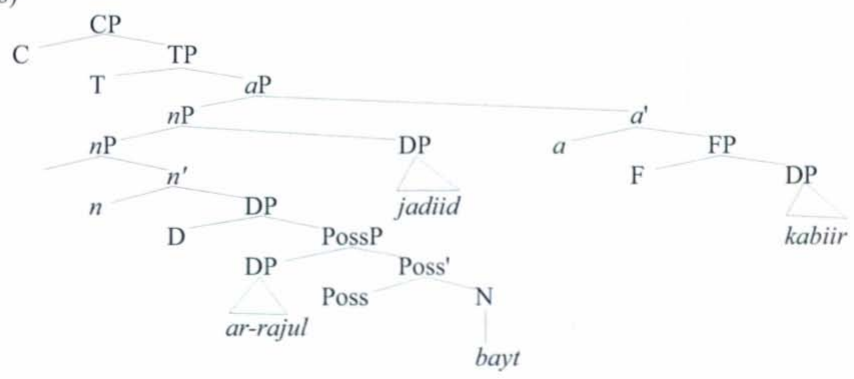
The attributive adjective *jadiid* 'new' in the following example modifies the head noun of the CS (*bayt* 'house'):

(65) bayt-u ar-rajul-i al-jadiid-u kabiir-u-n
house-NOM DEF-man-GEN DEF-new(M.S.)-NOM big(M.S.)-NOM-INDEF
'The man's new house is big'

For this construction, I propose that the attributive adjective originates as an adjunct to the CS (*n*P), which is the highest nominal projection to which the adjective is semantically connected (i.e., the head noun *bayt* 'house' is modified by that attributive adjective). This proposal is motivated by Case and agreement considerations. This position is different from what Ritter (1995), Fassi-Fehri (1999), and Benmamoun (2000) have proposed for corresponding examples in Modern Hebrew and Arabic, respectively (see examples (33), (35), and (39) above and the discussions surrounding them).

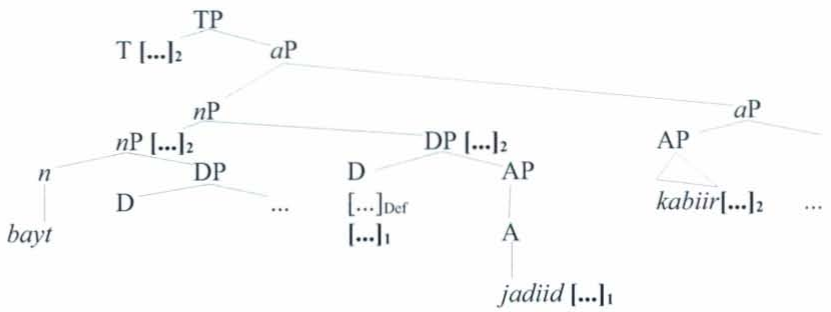
The attributive adjective *jadiid* 'new(M.S.)' agrees with the head noun *bayt* 'house' in φ-features, Case, and definiteness (recall that definiteness on these two elements are determined by the possessor noun *ar-rajul* 'DEF-man'). For (65), I propose the representation in (66):

(66)



Inside the CS *n*P, the derivation proceeds by *bayt* raising to Poss, D, and *n*, as has been demonstrated. Once it reaches *n*, *bayt* becomes structurally close enough to the attributive adjective (which adjoins to *n*P), meaning that nothing intervenes between these elements. (Recall that by the time *bayt* reaches *n*, the predicative adjective *kabiir* 'big' would have raised to the inner spec of *a*P). Under Scan, the T head Scans and connects *bayt* and *jadiid* (and *kabiir*) by establishing links (i.e., boldfaced **[...]**$_2$) with these lexical items:[183]

(67)



Scan allows the adjective *jadiid* 'new' (as well as the predicative *kabiir* 'big'[184]) to receive a copy of the φ-feature values (i.e., masculine, singular) on the head noun *bayt* 'house' in addition to definiteness (i.e., [definite]).

When the phasal head C selects T, the Probe C-T probes the head noun *bayt* (in *n*) and the attributive adjective *jadiid* (adjoined to *n*P). Under Agree, the unvalued φ-features on the

183 Note that Scan operates inside the DP *al-jadiid* 'DEF-new(M.S.)', as can be seen from link [...]$_1$ in (67).

184 Note however that the head D of DP which selects the predicative has no slot for the definiteness feature, thus when Scanned by T, it should not be expected to receive the same copy of the definiteness feature value on the attributive adjective *jadiid*.

Probe C-T receive valuation, and simultaneously, the Goals *bayt* and *jadiid* receive valuation for their unvalued Case features (i.e., nominative), thus producing a convergent derivation at LF.

Adjoining the attributive adjective *jadiid* 'new' to *n*P seems to be the best position for this adjective. There, the adjective is close to the head noun *bayt* 'house' which it modifies, allowing value-sharing to proceed between these elements (through Scan). Also, being in that position allows the adjective to be probed by the same Probe which reaches the head noun, thus receiving the same Case value.

The same derivational steps advanced for (65) apply for the following example (with the complementizer *ʔinna* 'that'):

(68) ʔinna bayt-a ar-rajul-i al-jadiid-a kabiir-u-n
Comp house-ACC DEF-man-GEN DEF-new(M.S.)-ACC big(M.S.)-NOM-INDEF
'(It is confirmed) that the man's new house is big'

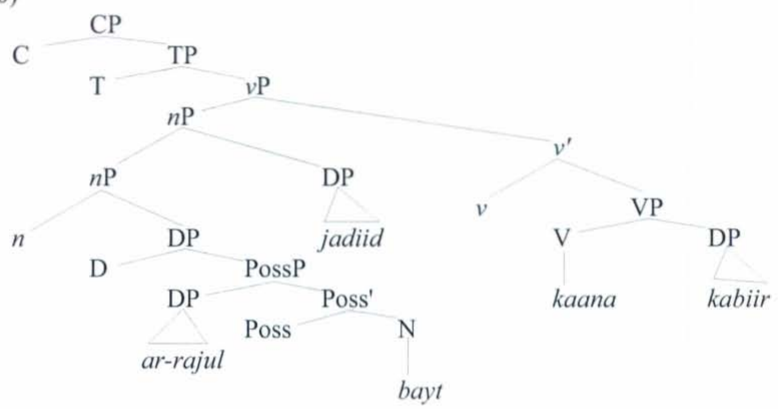
However, the accusative Case values on the head noun *bayt* 'house' and its attributive adjective *jadiid* 'new' is the result of an Agree relation with the Probe C-T (containing *ʔinna* 'that'), as has been established.

Consider the following example with the verbal copula *kaana* 'was':

(69) kaana bayt-u ar-rajul-i al-jadiid-u kabiir-a-n
was house-NOM DEF-man-GEN DEF-new(M.S.)-NOM big(M.S.)-ACC-INDEF
'The man's new house was big'

As we have seen, the accusative Case value on the predicative adjective *kabiir* 'big' is the result of a successful Agree relation between this adjective and the *v*-V Probe. Consider the following representation for the example in (69):

(70)



The nominative Case values on the head noun of the CS *bayt* and the attributive adjective *jadiid* are valued by the C-T Probe, as we have seen, and the result is a convergent derivation at LF.

To summarize, the adjectives discussed in this chapter are said to enter the syntactic derivation with no values for the features [Number] and [Gender], but receive values for these features from other syntactic elements in the course of the derivation. Crucially,

this type of adjective will be distinguished from two other types of adjective, which will be introduced in the following chapter.

One type of adjective will be assumed to have come from the lexicon with one valued φ-feature (i.e., [Number]), while the adjective in the other type enters the derivation with two valued φ-features (i.e., the adjective has values for the φ-features [Number] and [Gender]).

In chapter 6, one class of adjective-containing constructions known in the Arabic traditional literature as *an-naʕt as-sababiy* or 'The Indirect Attribute' will be introduced. The adjective in these constructions shows some unique characteristics of agreement: Semantically, it modifies one nominal element, but agrees, syntactically, with another nominal element in the structure.

Chapter 6

The Indirect Attribute

1. Introduction

This chapter presents a set of related adjective-containing constructions to which traditional grammarians refer to as *an-naʕt as-sababiy* or 'the Indirect Attribute'.[185] The adjective in this construction shows dual properties of semantic and syntactic agreement: Unlike the adjectives we have considered thus far, the adjective in this type of construction describes an attribute in a following, rather than preceding, noun. Generally, the modified noun bears a possessive pronoun which refers to the preceding noun, thus producing a typical CS construction.

As far as φ-features are concerned, this adjective comes from the lexicon with a valued [Number] feature, but an unvalued [Gender] feature; that is to say, this adjective enters the syntactic derivation with an empty slot for the [Gender] feature, and unless this feature receives a value, the derivation will not succeed.

This chapter also introduces another type of adjective- *ʔism at-tafḍiil* or 'the superlative'-,

185 The terminology *Indirect Attribute* is from Doron and Heycock (1999).

which forms a CS construction with its following noun. However, as far as agreement features, this adjective shows a unique characteristic: It is always *masculine* and *singular.* In other words, it does not seem to agree with any nominal (or adjectival) elements in the structure.

Significantly, it will be shown that φ- and Case features operate independently. This conclusion will have implications for how we view the features present on adjectives from the numeration.

2. *an-naʕt as-sababiy* 'The Indirect Attribute'

Consider the adjective *mariiḍ* 'sick' in the following examples of the Indirect Attribute:

(1) qabal-tu ṣadiiq-a-n mariiḍ-a-n ʔax-u-hu
met-I friend(M.S.)-ACC-INDEF sick(M.S.)-ACC-INDEF brother-NOM-his
'I met a friend whose brother is sick' or '... with a sick brother'

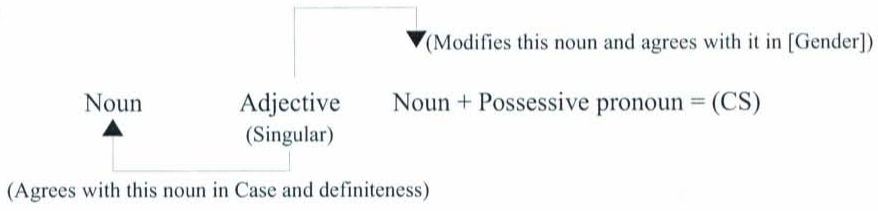
(2) qabal-tu ṣadiiq-a-n mariiḍ-at-a-n ʔuxt-u-hu
met-I friend(M.S.)-ACC-INDEF sick-F.S.-ACC-INDEF sister-NOM-his
'I met a friend whose sister is sick'

Interestingly, the adjective *mariiḍ* 'sick' in these examples exhibits a dual role: It modifies

the following head nouns of the CS, *ʔax* 'brother' and *ʔuxt* 'sister', respectively, and agrees with these nouns in the [Gender] feature only (i.e., *masculine* and *feminine*, respectively); however, the adjective also agrees with the preceding nouns in Case (i.e., accusative), and definiteness (i.e., both are indefinite). As for the [Number] feature, the adjective is always *singular.*

Note further that the possessive pronoun *-hu* 'his' cliticizes onto the modified nouns in these examples. This pronoun refers to and agrees with the other noun in the structure (i.e., *ṣadiiq* 'friend (M.S.)). To illustrate, consider the following:

(3)



Traditional grammarians argue that the nominative Case value on the nouns *ʔax* and *ʔuxt* in (1) and (2) are assigned by the adjective itself. I will argue, instead, that this nominative Case is not valued by the adjective, but rather, through a successful Agree relation with a functional category.[186]

186 A similar case of dual agreement has been presented in Béjar (2008). In her analysis of data from Erzya Mordvinian, Béjar highlights cases where the agreement morphology on the verbs in the following examples shows that agreement is controlled by both the subject and the object, and that the verbs agree with one of these elements in the [Person] feature, while it agrees with the other element in the [Number] feature:

(i) soda-s-y-ń
know-TNS-PL-1
'I know them'

Traditional Arabic reference books discuss a sub-type of *the Indirect Attribute*. The adjective in this sub-type shows full agreement with the preceding noun, although semantically it applies to the following noun, as in the following examples:[187]

(4) qabal-tu rajul-a-n ṭawiil-a aš-šaʕr-i
met-I man-ACC-INDEF long(M.S.)-ACC DEF-hair(M.S.)-GEN
'I met a man with long hair' or 'I met a long-haired man'

(5) qabal-tu ar-rajul-a aṭ-ṭawiil-a aš-šaʕr-i
met-I DEF-man-ACC DEF-long(M.S.)-ACC DEF-hair(M.S.)-GEN
'I met the man with the long hair'

(6) qabal-tu fataat-a-n ṭawiil-at-a aš-šaʕr-i
met-I girl-ACC-INDEF long-F.S.-ACC DEF-hair(M.S.)-GEN
'I met a girl with long hair'

(7) qabal-tu al-fataat-a aṭ-ṭawiil-at-a aš-šaʕr-i
met-I DEF-girl-ACC DEF-long-F.S.-ACC DEF-hair(M.S.)-GEN
'I met the girl with the long hair'

The adjective *ṭawiil* 'long' agrees with the preceding nouns *rajul* 'man' and *fataat* 'girl' in the φ-features of [Gender] and [Number]. It also agrees with these nouns in Case (i.e.,

(ii) soda-s-am-iź
know-TNS-1-PL
'They know me' (Béjar, 2008, p. 131)

187 Notice that unlike the modified nouns in examples (1) and (2), no possessive pronoun cliticizes onto the modified noun in these examples.

accusative), and (in)definiteness.

The adjective *ṭawiil* 'long' forms what seems to be a CS-like construction with the noun it semantically applies to (i.e., the following noun *aš-šaʕr* 'DEF-hair'). That is, the adjective behaves like a head noun in a typical CS in that the following noun bears a genitive Case value, and that it does not show definiteness, especially when the preceding noun is indefinite (as in examples (4) and (6)). The morphological marking of (in)definiteness on the adjective in this type of CS-like constructions constitutes one major difference between the typical, nominal[188] CS and this type. Thus, to distinguish this particular type of CS from the typical (nominal) one, it will be referred to as the Adjectival Construct (AC).

In Arabic tradition, this type of sentence is analyzed as a CS, and is referred to as *al-ʔiḍaafah al-lafðiyyah* 'pseudo-Construct State' or 'pronunciational Construct State'. Traditional grammarians argue that in this type of sentence a CS-like construction is formed as a way to avoid what would otherwise be a form that would be difficult to pronounce. In other words, when forming a CS, a phonological rule[189] deletes *tanwiin* (or 'nunnation') (i.e., ***-n*** the indefinite marker, as in (8)), *nuun at-taθniyah* (i.e., ***-n*** in the dual form, as in (9)), and *nuun al-jamʕ* (i.e., ***-n*** in the plural form, as in (10)) from the head adjective as in the following examples:

188 Recall that (in)definiteness on a *nominal* CS's head noun is determined by that of the possessor noun, as established in the previous chapter.

189 A similar rule of deletion has been illustrated and discussed in nominal SCs above.

(8) qaa?id-u-**n** aṭ-ṭaa?ir-at-i ▶ qaa?id-u aṭ-ṭaa?ir-at-i
pilot-NOM-INDEF DEF-plane-F.S.-GEN
'The plane's pilot'

(9) qaa?id-aa**n** aṭ-ṭaa?ir-at-i ▶ qaa?id-aa aṭ-ṭaa?ir-at-i
pilot-Dual(NOM) DEF-plane-F.S.-GEN
'The plane's (two) pilots'

(10) muqaatil-uu**n** al-jabhat-i ▶ muqaatil-uu al-jabhat-i
fighter-M.Pl.(NOM) DEF-frontline-GEN
'The frontline's fighters'

Semantically, traditional grammarians add that unlike nominal CSs, the second part in the this type does not add definition and/or specification to the first part of the AC. Thus, forming this type of CS-like construction seems to serve merely to facilitate pronunciation. As we have seen, syntactically, ACs resemble nominal CSs in various respects; thus, in the following section, I develop a syntactic analysis for this type of CSs, building on the analysis of nominal CS developed in the previous chapter.

2.1 Analysis of the Indirect Attribute

Preparatory to detailing the internal structure of the Indirect Attribute, I provide a brief overview of selected analyses proposed for a similar construction (by contemporary

linguists). Consider the example in (11), where there are two nouns, *al-bayt* 'DEF-house' and *lawn* 'colour', followed by the predicative adjective *jamiil* 'beautiful(M.S.)'. The adjective *jamiil* 'beautiful(M.S.)' modifies the second noun *lawn,* onto which the possessive pronoun *-hu* 'its' is cliticized:

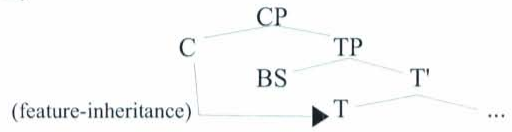
(11)	al-bayt-u	lawn-u-hu	jamiil-u-n[190]
	DEF-house-NOM	color-NOM-its	beautiful-NOM-INDEF
	'The house has a beautiful color'		
	Literally: 'The house, its color is beautiful'		

Doron & Heycock (1999) analyze the first noun as a Broad Subject (BS), which is merged to spec TP.[191] They analyze the second noun *lawn* 'color' as a Narrow Subject (NS), which is raised to spec TP in order to check feature(s)[192] (following Chomsky's, 1995, feature-checking proposal).

If the BS originates in spec TP, there is no source of the nominative Case value for it (i.e., its [*u*Case] feature would not be valued). That is, under the FI model of Agree, the BS in this position would be skipped when the phasal head C selects and transfers its features to the head T as in:

190 This example has been introduced in (72) on page 238.
191 Doron (1996) argues that the rest of the sentence (i.e., *lawn-u-hu jamiil-u-n*) is a "predicate which is predicated of the *mubtada?*" (p.78).
192 Features can be those of agreement.

(12)



Thus, under the FI model, the source for the BS's nominative Case value remains unaccounted for.

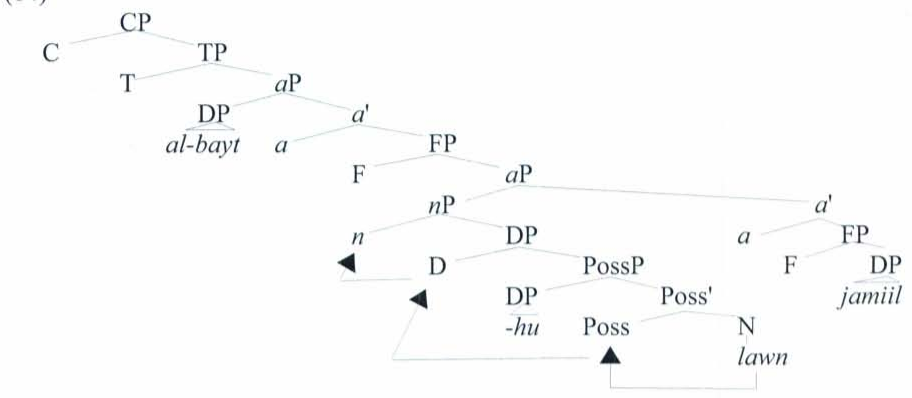
Plunkett (1993) argues that Arabic allows the occurrence of multiple topics; that is, the example in (13) has two topics: *Ali-un* and *ʔax*. To Plunkett, one topic is in spec TP, and the other is in spec MoodP, which heads an AgrP:[193]

(13) Ali-un ʔax-u-hu mariiḍ-u-n

Contra Doron & Heycock (1999) and Plunkett (1993), I will show that the BS *al-bayt* 'DEF-house' in example (11), originates in the spec of a phasal *a*P. The NS *lawn* 'colour', on the other hand, originates in a different spec position of *a*P. In section 4.6, chapter 4 (page 220), I propose the existence of recursive *a*Ps in Zero Copula constructions containing pronouns of separation, following this line of argument, I propose that the construction in (11) contains recursive *a*Ps, as in (14):

193 According to Plunkett (1993), spec TP is the original position of a topic.

(14)



Under (14), the BS *al-bayt* 'DEF-house' originates in spec of the higher *a*P. Given that the NS *lawn* 'colour' is the head noun for the CS *lawn-u-hu* 'its colour', it originates under the phasal *n*P, which in turn is located in the spec of the lower *a*P.

Assuming recursive *a*Ps solves a number of potential problems. Consider, for example, the following sentences:

(15) ʔinna al-bayt-a lawn-u-hu jamiil-u-n
Comp DEF-house-ACC colour-NOM-its beautiful(M.S.)-NOM-INDEF
'(It is confirmed) that the house, its colour is beautiful'

(16) kaana al-bayt-u lawn-u-hu jamiil-u-n
was DEF-house-NOM colour-NOM-its beautiful(M.S.)-NOM-INDEF
'the house, its colour was beautiful'

The BS *al-bayt* 'DEF-house' bears the accusative Case value by the complementizer *ʔinna* 'that'; however, the Case value on the NS is nominative. Assuming that BS and NS originate in multiple specifiers, would not explain why these two subjects bear different Case values:

(17)

Being in multiple specs of the same phase (e.g., *a*P) cannot protect the Case value on the NS; it should bear the same Case value the BS bears, given that both are accessible to the same, higher Probe.

Assuming the representation in (14), the derivation proceeds as follows. Beginning with the CS part, the head noun (or NS) *lawn* 'colour' performs multiple movements to the heads Poss, D,[194] and then to the phasal head *n*. Once it reaches *n*, the head *n* transfers all of its features (i.e., [*u*φ] and valued [CASE]) to the proxy head D. The complex Probe *n*-D probes for goals and finds the possessive pronoun *-hu* 'its'. Under Agree, the unvalued φ-features on the Probe receive valuation, and simultaneously, the pronoun receives valuation for its [*u*Case] (genitive).

194 Traditional grammarians, argue that pronouns such as *-hu* 'its' in (11) are definite (see also, Al-Shamrani, 1994; Benmamoun, 2000). Following this line of argument, I will assume that the pronoun *-hu* 'its' is definite, thus the head D, to which the possessed noun raises, would have a filled slot for the definiteness feature (i.e., definite), despite that it is not morphologically realized on the noun *lawn* 'colour'.

Inside the lower adjectival phase *a*P, the adjective *jamiil* 'beautiful' is probed by the complex probe *a*-F and, as a result, no valuation takes place. However, under Case-R, the unvalued Case feature on the adjective is reserved (nominative) by this Probe. The EF feature on *a*-F raises the adjective to the inner spec of *a*P. There, through Scan, it can receive a copy of the φ-feature values on the head noun *lawn* 'colour' with which it modifies and agrees.

The phasal head *a* of the higher *a*P transfers its features to the proxy head F. The newly formed Probe *a*-F probes for goals and finds the head noun of the CS *lawn* 'colour' (in the head *n*), and possibly the raised adjective (in spec of the lower *a*P). The Probe, then, values the [*u*Case] feature on the head noun *lawn* 'colour' (nominative), and receives valuation for its unvalued φ-features. Notice that Case on the raised adjective has already been reserved by the lower Probe *a*-F.

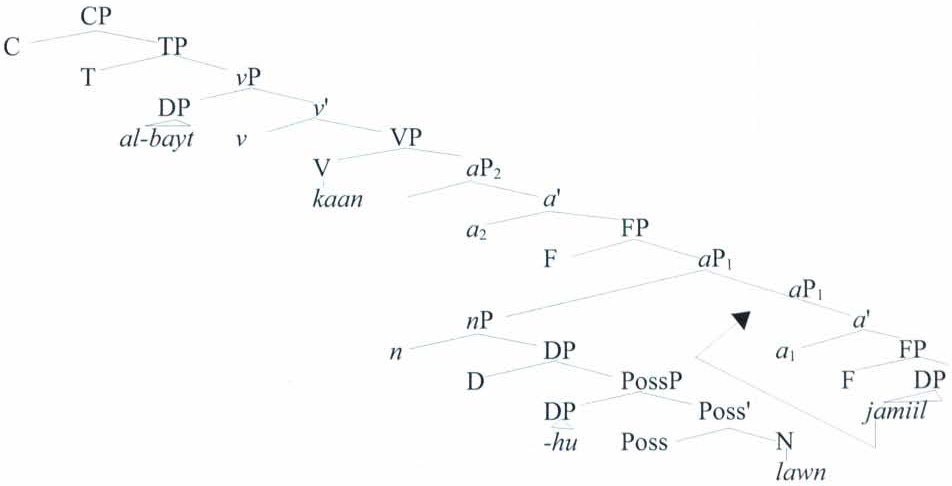
As for the nominative Case value on the BS *al-bayt* 'DEF-house', the complex Probe C-T probes the BS in spec of the higher *a*P. Under Agree, the Probe receives valuation for its unvalued φ-features, and at the same time, values the [*u*Case] on the BS (nominative), allowing the derivation to converge at LF.

The derivation of the sentence in (15) (with the complementizer *ʔinna*) can proceed in exactly the same way proposed for the sentence in (11). The only difference is that the

Case value borne by the BS *al-bayt* 'DEF-house' is valued by the complementizer *ʔinna* 'that' (which originates under C).

For the sentence with the copular verb *kaana* 'was' in (16), however, I will propose the following representation:

(18)



Under (18), the lexical verb *kaana* takes the phasal complement aP_2.[195] Notice that none of the DP elements in this example bear the accusative Case value, begging the question

195 Consider the following example:

(i)	marar-tu bi	rajul-i-n	ṭaala	šaʕr-u-hu
	passed-I by	man-GEN-INDEF	became long	hair(M.S.)-NOM-his

'I passed by a man whose hair has become long'

Notice that even thought the CS phrase is preceded by the verb *ṭaala* 'became long', the head noun of the CS bears the nominative Case value, not accusative. This could be taken as an evidence that the CS is shielded form the verbal Probe, and headed by a different Probe from which the nominative Case value comes.

of how the *v*-V Probe values its unvalued φ-features.

Assuming that the derivation proceeds inside the CS (*n*P) as previously illustrated, the lower a_1-F Probe probes and the adjective *jamiil* 'beautiful' and reserves its Case (nominative). The EF on this Probe raises the adjective to the inner spec of the lower aP_1, where it is in a position to share a copy of the φ-feature values of the head noun *lawn*.

The higher a_2-F Probe probes the head noun *lawn* (in *n*) as well as the raised adjective *jamiil*. As a result, the Probe values its unvalued φ-features and the goal *lawn* receives nominative Case value. Notice that the [*u*Case] feature on the adjective has been reserved by the lower a_1-F Probe, so that no change to the Case value on the adjective is expected.

The fact that none of the nominal or adjectival elements in this example bear the accusative Case value indicates that the Agree relations did not include the *v*-V Probe. In other words, the copular verb *kaana* 'was' in this construction seems to act like the verb *believe* in English, which can select a finite CP as its complement as in (19):

(19) I believe that he is innocent.

The subject pronoun *he* in (19) is nominative, indicating that it is separated from the verb *believe* (by the CP). More importantly, it indicates that the verb *believe* does not need to have a Goal which can value its unvalued φ-features and receive an accusative Case value

in exchange.

The nominative Case value on the BS *al-bayt* 'DEF-house' is valued by virtue of a successful Agree relation with the C-T Probe, and the derivation converges at LF.

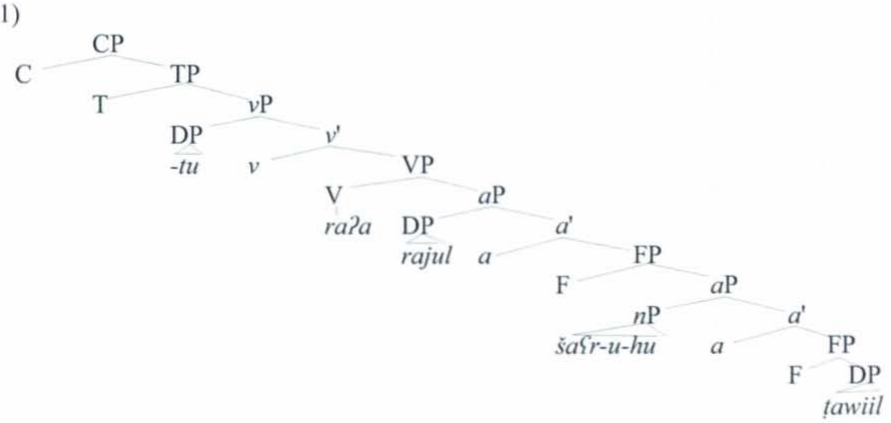
The representation in (18) can be extended to account for the following structure:

(20)	raʔay-tu	rajul-a-n	šaʕr-u-hu	ṭawiil-u-n
	saw-I	man-ACC-INDEF	hair(M.S.)-NOM-his	long(M.S.)-NOM-INDEF

'I saw a man with a long hair' or 'I saw a man whose hair is long'

In (20), the objective DP *rajul* 'man' bears an accusative Case value by the verb *raʔa* 'saw'. The only difference between this example and (16) is the fact that the latter lacks an accusative DP. The following representation is proposed for (20):

(21)



The objective DP *rajul* 'man' is placed in the spec position of the higher *a*P. The derivation of this structure proceeds in the same manner illustrated for the example in (16); however, the *v*-V Probe in (20) can enter into a successful Agree relation with the objective DP *rajul* 'man' in spec of the higher *a*P phase (notice the accusative Case value on the DP).

Consider the following structure which has an *Indirect Attribute*: (This is similar to (1) above)

(22) raʔay-tu rajul-a-n ṭawiil-a-n šaʕr-u-hu
saw-I man-ACC-INDEF long(M.S.)-ACC-INDEF hair(M.S.)-NOM-his
'I saw a man with a long hair'

This structure is different from (20) in various respects. The adjective here shows a dual type of agreement: It agrees with the preceding noun *rajul* 'man' in Case (i.e., both bear accusative Case value) and definiteness (i.e., both are indefinite). Also, the adjective modifies and agrees with the following head noun of the CS *šaʕr* 'hair' in the feature [Gender]. As for [Number], the adjective is always [*singular*]. In terms of word order, the adjective appears before the noun it modifies (cf. the adjective in (20)).

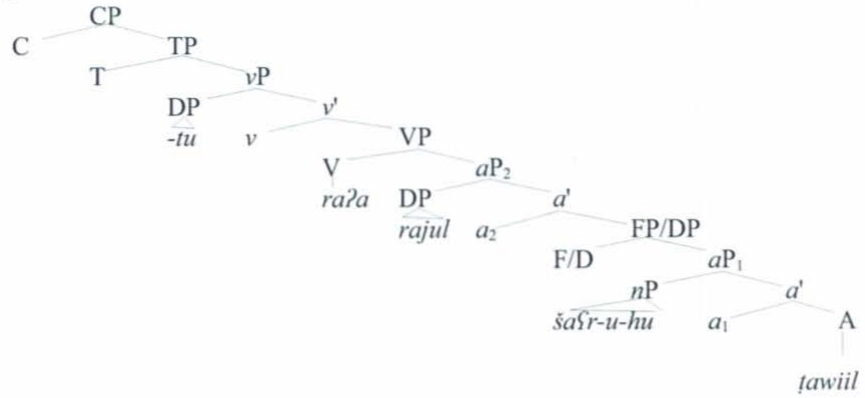
Given that the adjective *ṭawiil* 'long' in examples such as (22) always bears the [singular]

value for the φ-feature [Number], I claim that this particular type of adjective comes from the lexicon with a valued [Number] feature (i.e., *singular*). I further claim that this adjective comes from the lexicon with an empty slot for the feature [Gender], and thus must receive valuation for this feature in order to participate in a successful Agree relation.

For the structure in (22), the representation in (21) will be assumed, but with some slight modifications: I assume that the lower aP_1 (heading the adjective *ṭawiil* 'long') is defective (i.e., lacks φ-features). Being defective, there is no need for the head a_1 of aP_1 to take a complement, proxy FP, because no operation of feature-inheritance is possible. I also assume that the adjective, in its original position, is not headed by a DP[196] (i.e., it simply lacks a slot for the definiteness feature), and that definiteness on the adjective (like the nominal head of a CS) would not be determined until a later step in the derivation. The lower aP_1 is taken as a complement by the head D (or F/D, for now):

196 Here, this might be seen as an exception to the adopted conclusion that all adjectives (as well as nouns) are DPs (i.e., headed by DPs). However, if we consider the analysis proposed for the head noun of the CS, which states that this noun is not headed by a DP in its original position, but raises to a D head in the course of the derivation, then we may not be making an exception after all.

(23)



Given the unique behaviour the adjective shows in such structures, I will assume that unlike any other type of adjectives we have encountered thus far, this adjective raises multiply before it enters into Agree with any Probe in the structure. In other words, like the head noun of a nominal CS, the adjective raises before syntactic operations such as FI are supposed to occur.

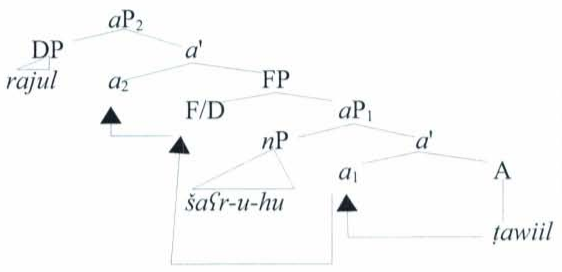
In situ, the adjective can be Scanned by the *defective* head a_1 or the CS (*n*P). As a result, the adjective can then share with the head noun *šaʕr* 'hair', which it modifies, a copy of the [Gender] feature value. Thus, at this point in the derivation, the adjective bears the values *singular* and *masculine* for the features [Number] and [Gender], respectively.[197]

Movement of the adjective proceeds when it raises to the head a_1 of the lower aP_1. It then raises to the head F/D, where it picks up an empty slot for the definiteness feature (i.e.,

197 In (22), Scan between *n*P *šaʕr-u-hu* 'his hair' and the adjective *tawiil* 'long' operates prior to the movement of the adjective to a_1.

[...]$_{Def}$). Finally, the adjective moves to the head a_2 of the higher aP_2:

(24)



Sharing a value for Definiteness is not possible at this point given that the adjective *ṭawiil* 'long' is not headed by a DP. The adjective then moves to the head D (which also functions as a proxy for the phasal head a_2 of the higher aP_2). There, the adjective picks an empty slot for the definiteness feature, which must be filled later in the course of the derivation. I assume that the definiteness slot can be filled once the adjective moves higher to the head a_2 of aP_2.[198] In other words, once the adjective reaches the head noun a_2 of the higher aP_2, it would have received a value (i.e., *masculine*) for its unspecified [Gender] feature, in addition to the *singular* value for the [Number] feature. The adjective also bears an empty slot for definiteness (i.e., [...]Def) in addition to an unvalued [Case] feature.

198 An issue arises though: If Scan is to operate between D and the head noun *šaʕr* 'hair' in *n*P once the adjective moves to the head D, then we could expect a discrepancy (in definiteness values) between the adjective and the noun (i.e., *rajul* 'man'). That is, under Scan, the adjective would bear the *definite* value on the noun *šaʕr* instead of *indefinite*. Thus, one way to explain this would be to assume that *exceptionally* Scan does not operate at this particular point in this specific derivation.

In a_2, the adjective can be Scanned and connected by the DP *rajul* 'man' in spec aP_2. Under Scan, the empty slot for definiteness can receive a copy of the [indefinite] value on the DP *rajul* 'man'. Also, the adjective becomes accessible to the higher probe (i.e., *v*-V). As a result of Agree, the adjective receives valuation for its [*u*Case] feature (accusative) by the *v*-V Probe.

Assuming that the adjective is not headed by a DP, and that it picks up an empty slot for definiteness higher in the derivation, avoids a conflict in definiteness values between the adjective and the nearer, potential source for this feature (i.e., *n*P *šaʕr-u-hu* 'his hair').

The adjective in such structures is defective in the sense that it bears a valued φ-feature, but has another unvalued feature; thus, it becomes active early on the derivation. Therefore, had the adjective not moved higher, it would have received the wrong Case, definiteness, and φ-values.

Consider the following example which is not headed by any verbal or complementizer elements:

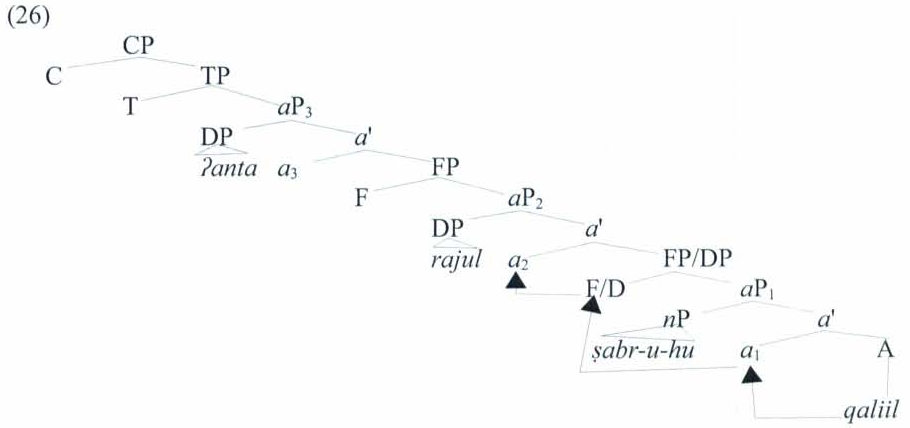
(25) ʔanta rajul-u-n qaliil-u-n ṣabr-u-hu
you man-NOM-INDEF little(M.S.)-NOM-INDEF patience-NOM-his
'You are a man whose patience is little' or 'you are a man with little patience'

The adjective *qaliil* 'little(M.S.)' in (25) agrees with the noun *ṣabr* 'patience' (head of the

CS) in [Gender], but agrees with the noun *rajul* 'man' in Case and definiteness. Notice that for the feature [Number], the adjective is always *singular.*

The structure in (25) is not headed by any overt Case assigner/valuer. Based on the representation in (23), this structure will be syntactically represented as:

(26)



Following the previous line of argument, the adjective raises to the head a_1 of aP_1. There, it can be Scanned and thus receives a copy of the [Gender] feature value of the head noun of the CS *ṣabr* 'patience' (recall that the adjective comes with the value *singular* for the [Number] feature).[199] Next, the adjective moves to the head D, where it picks up an empty slot for the definiteness feature.

199 Alternatively, in situ, the adjective could be Scanned by *n*P (i.e., prior to its movement to a_1).

Once it raises to the head a_2 of aP_2, it becomes accessible to higher probes, and able to share (in)definiteness (i.e., indefinite) with the preceding noun *rajul* 'man'.

The nominative Case value on the adjective appears to be a result of successful Agree with the a_3-F Probe, which also probes the NS *rajul* 'man' in spec aP_2. The C-T Probe probes the BS *ʔanta* 'you' and values its [*u*Case] feature (nominative), and at the same time, receives valuation for its unvalued φ-features. The overall result is a convergent derivation at LF.

3. *Adjectival Construct*

In this section, one sub-type of the *Indirect Attribute* (see examples (4) and (6) above) will be considered. As previously mentioned, the adjective in this sub-type forms a CS-like construction with the following noun. Consider the following example:

(27)	ra?ay-tu	fataat-a-n	qaliil-at-a	aṣ-ṣabr-i
	saw-I	girl-ACC-INDEF	little-F.S.-ACC	DEF-patience-GEN

'I saw a girl with little patience' or 'I saw a girl whose patience is little'

The adjective *qaliil* 'little' agrees with the preceding noun *fataat* 'girl' in Case, φ-features, and definiteness; thus, formally, it behaves exactly like an attributive A. Also, the adjective (semantically) modifies and forms (syntactically) a CS with the following noun

(notice the genitive Case on its complement *aṣ-ṣabr-i* 'DEF-patience-GEN').

An *almost* identical type of constructions is used productively in Modern Hebrew. Hazout (2000) provides an analysis of adjectival constructs (AC) in this language:

(28) ha- na'ara [Sxorat ha- se'ar][200] (Hazout, 2000, p. 29):
the girl black the hair
'The girl who is black of hair'

(29) na'ar [yefe eynayim]
boy pretty eyes
'A boy pretty of eyes'

The bracketed words constitute the Adjectival Construct (AC) in this language. The AC functions as both a modifier and predicate for the subject nouns *ha- na'ara* 'the girl' and *na'ar* 'boy' in (28) and (29), respectively. As far as the semantics, the head adjective in the AC is predicated of the second, following NP/DP part.

Hazout views the AC as a counterpart of the nominal CS construction based on the common characteristics both AC and nominal CS in Hebrew show. Hazout (2000) shows, for example, that the first part (both adjectival and nominal) of a CS is subject to phonological change.[201] A common phonological aspect is highlighted by Borer (1988)

200 Here, I maintain the original transliteration for the examples proposed in Hazout (2000).
201 The adjective *Sxorat* 'black' of the AC in example (28) is realized as *Sxora* 'black' in non-Construct constructions (Hazout, 2000, p. 31).

(as cited in Hazout, 2000), who observes that primary stress falls on the possessor in a CS.

Like nominal CSs, the head of an AC cannot be separated from its following NP/DP in Modern Hebrew, as the ungrammaticality of (30) shows:

(30) *na'ara [Sxorat me'od se'ar] (Hazout, 2000, p. 31)
girl black very hair
meaning to say 'a girl whose hair is very black'

Notice that the same restriction applies to Arabic ACs, as can be seen from the ungrammaticality of the following:

(31) *qabal-tu rajul-a-n ṭawiil-a mariiḍ-u-n aš-šaʕr-i
met-I man-ACC-INDEF long-ACC sick-NOM-INDEF DEF-hair-GEN

In Modern Hebrew, the distribution of the definite article shows another parallel between nominal CSs and ACs: (In)definiteness does not show up on the first part of the CS, as shown by the ungrammaticality of the following:

(32) *ha- beyt mora (Hazout, 2000, p. 32)
the house teacher

(33) *ha- na'ara [ha- Sxorat se'ar]

The definiteness of the whole nominal CS (as well as AC) in Modern Hebrew is determined by that of the second part. This is also true for Arabic nominal CSs; nevertheless, ACs in Arabic are different from nominal CSs in that (in)definiteness on the AC is independent of that of the following part. That is, it depends on the (in)definiteness of the preceding noun, as can be seen from the following:

(34)	jaaʔ-at	al-fataat-u	aṭ-ṭawiil-at-u	aš-šaʕr-i
	came-3F.S.	DEF-girl-NOM	DEF-tall-F.S.-NOM	DEF-hair-GEN
	'The girl whose hair is long came'			

(35)	jaaʔ-at	fataat-u-n	ṭawiil-at-u	aš-šaʕr-i
	came-3F.S.	Girl-NOM-INDEF	tall-F.S.-NOM	DEF-hair-GEN
	'A girl whose hair is long came'			

Recall that when the preceding noun is indefinite, the indefinite marker *-n* is deleted from the adjective as in (35).

Hazout states that "unlimited embedding" is also possible in Hebrew's nominal CSs (p. 34). In contrast, AC constructions do not allow such embeddings at all:

(36)	*ha-	na'ara	[yefat	eyne	Dina]	
	the	girl	prety	eyes	Dina	(Hazout, p. 35)

(36) is ruled out because embedding of an additional possessor (i.e., *Dina*) in the second part of the construction is ungrammatical.

Another difference between ACs in Arabic and Modern Hebrew can be seen from the following:

(37)	*ha-	na'ara	[yefat	ene	-ha]
	the	girl	pretty	eyes	-her

If the embedded element is a pronominal clitic, embedding is not acceptable in Hebrew's ACs. The Arabic counterpart of this example, however, is perfectly grammatical:

(38)	fataat-u-n	jamiil-at-u-n	ʕayn-aa-ha
	girl-NOM-INDEF	beautiful-F.S.-NOM-INDEF	eyes-Dual-her
	'A girl whose (two) eyes are beautiful'		

Notice the agreement between the adjective and the noun it modifies in the following Hebrew examples:

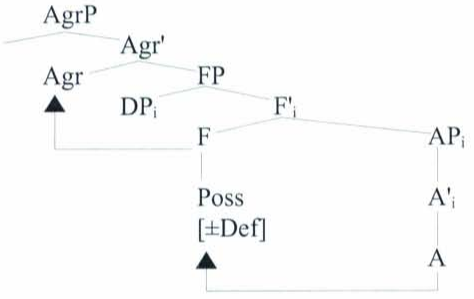
(39)	ha-	ne'arot	[Sxorot	/*Sxor	ha-	se'ar](Hazout, 2000, p. 36)
	the	girls	black.FM.PL/	balck.MS.SG	the	hair

(40)	na'ar	[yefe /	*yefot	eynanyim]
	boy	pretty.MS/SG	pretty.FM.PL	eyes

Although the adjective *Saxor* 'black' semantically applies to the noun *se'ar* 'hair' (M.S.), it appears in the feminine plural form, thus agreeing with the head noun *ne'arot* 'girls'. (Recall that ACs in Arabic behave in the same way).

Hazout (2000, p. 43) proposes the following representation for ACs in Modern Hebrew: (modified from Hazout)

(41)



According to Hazout, FP is the extended projection of AP. Based on (41), the head Poss is the source of genitive Case; thus, the genitive Case value on the possessor (DP) is assigned (under agreement) in a spec-head relation with the head F (Poss). Likewise, agreement in definiteness is obtained through the same spec-head process (i.e., definiteness on FP is determined by that of the DP in spec FP).

The derivation of the AC proceeds through two steps of movement: (a) the adjective

moves to the head F, and (b) the head F (containing the raised A) moves to Agr. The DP is assigned the external theta role of AP as indicated by the indexation.

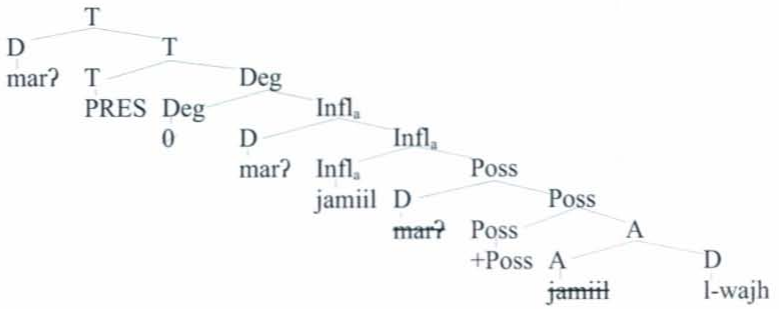
The adjectival element is the only one that moves; this, to Hazout, explains why no element can intervene between the adjective and the DP. Likewise, the fact that definite article cannot appear is taken as a consequence of these movements; that is, the position to be occupied is already filled by Poss.

Kremers (2003) states that there can be at least two functional projections in an AP (depending on the structure). For example, an AP in a CS will presumably have the functional projections of $Infl_a$ (for agreement between A and the N it modifies), and POSS (Possessive) (because the adjective can license a genitive noun). Consider the following example:

(42) al-mar?at-u jamiil-at-u al-wajh-i
DEF-woman-NOM beautiful-F.S.-NOM DEF-face(M.S.)-GEN
'the woman with the beautiful face' or 'the woman whose face is beautiful'

In this example, the adjective *jamiil-at* 'beautiful-F.S.' and the noun *al-wajh* 'DEF-face' form a CS, as the genitive Case on the noun shows. The adjective agrees with the noun *al-mar?at* 'the woman' in [Number], [Gender], Case, and definiteness. According to Kremers, the structure in (42) would have the following representation (p. 107):

(43)



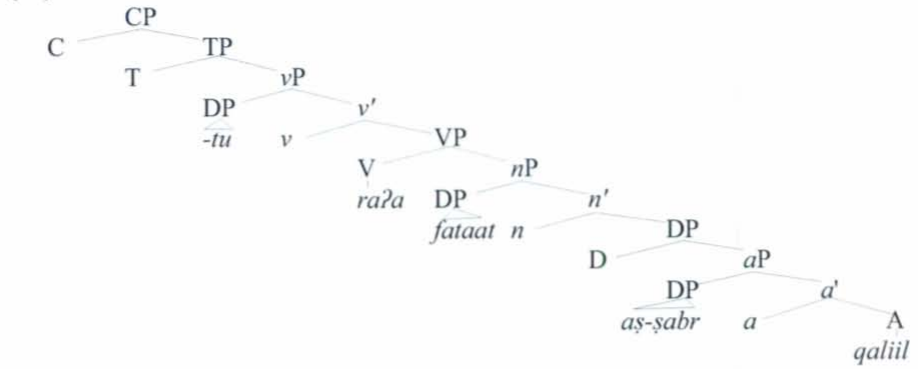
Because the adjective forms a CS with the following noun, Kremers argues that a Poss head, which assigns genitive Case to the noun *wajh*, must be present in such a structure.

3.1 An Agree-based analysis for AC:

(44) ra?ay-tu fataat-a-n qaliil-at-a aṣ-ṣabr-i
saw-I girl-ACC-INDEF little-F.S.-ACC DEF-patience(M.S.)-GEN
'I saw a girl with little patience' or 'I saw a girl whose patience is little'

I propose the following representation for (44):

(45)



In (45), the head of the AC *qaliil* 'little' originates under a defective *a*P.[202] The genitive noun *aṣ-ṣabr-i* 'DEF-patience-GEN' occupies spec *a*P. By analogy with nominal CSs, the adjective executes multiple movements: It raises to the head *a*, the head D of DP, and finally to the head *n* of *n*P. Recall that in nominal CSs, the genitive Case value on the possessor noun is valued under Agree with the Probe *n*-D. In (45), it is maintained that the genitive Case value on the noun *aṣ-ṣabr-i* 'DEF-patience-GEN' is valued by the same mechanism.

In (45), the idea that adjectives lack values for their φ-features is still maintained. Given that the adjective shows agreement in φ-features (in addition to Case and definiteness) with the noun *fataat* 'girl', the adjective must have come from the lexicon with no values for the φ-features [Gender] and [Number], and thus must be close enough to this noun to

202 A similar *defective* *a*P has been assumed for the first type of Arabic Indirect Attributes (see, representation (23) on page 305).

receive a copy of these values (i.e., no other φ-bearing element intervenes between them). This way, it is essential to assume a **delay** in the occurrence of Scan. In other words, Scan does not take place until the adjective has moved past the noun *aṣ-ṣabr* 'DEF-patient' (i.e., to *n*); otherwise, it could have ended up bearing/sharing the wrong set of φ-values (i.e., receiving φ-values from the noun *aṣ-ṣabr* 'DEF-patience' in spec *a*P).

Such a parametrization of the operation Scan suggests that there might be points in a derivation where Scan does not take place immediately (i.e., is not concurrent with the operation Merge, as initially assumed). The type of construction in (44) seems to be one of such case where Scan must be parametrized.

Icelandic provides support for the proposal that Scan can be delayed. In the work of Holmberg and Hróarsdóttir (2003), Spell-Out of a stylistically inverted Dative *wh*-word (in spec VP) is delayed until the C head (bearing an unvalued/uninterpretable o-feature (for 'operator')) enters the derivation, and enters into Agree with this *wh*-word, which also bears an interpretable Operator-feature.[203] The delay of Spell-Out in this analysis marginalizes the intervention effect of the *wh*-word, which is argued to be phonologically empty at this point (i.e., has not been spelled out), allowing T to probe further (beyond the *wh*-word) for a Goal.

203 The researchers (p. 1011) state that *wh*-phrase bears an uninterpretable c-feature, which must be valued by an interpretable C-feature on C, and the value for such a feature is [± question].

The derivation of (45) then proceeds with the adjective raising to *a*, and to the head D. As has been argued for the head nouns (and adjectives) of nominal (and adjectival) CSs, the adjective (in its original position) is not headed by a DP, so that the (in)definiteness on the adjective cannot be determined at this point in the derivation. However, when it raises to D, it picks up an empty slot for the definiteness feature.

Next, the adjective raises to the head *n*, where it receives a copy of the φ-feature values on the objective noun *fataat* 'girl',[204] in addition to (in)definiteness, through Scan. The phasal head *n* selects the head D of DP as its proxy. The *n*-D Probe then probes for goals, and finds the noun *ṣabr* 'patience' in spec *a*P. Under Agree, the noun receives valuation for its [*u*Case] feature (genitive), and the Probe receives valuation for its unvalued φ-features.

Once the Probe *v*-V is formed, it begins to probe for goals. It then probes the objective DP *fataat* as well as the adjective in *n*. Under Agree, both goals receive valuation for their [*u*Case] features (accusative).

In the same fashion, the subject DP *-tu* receives nominative Case value from the C-T probe, which in turn values its unvalued φ-features. Thus, the derivation converges at LF.

204 One difference between the adjectives in AC and those in the Indirect Attribute is that, in the latter, the adjectives come from the lexicon with a valued [Number] feature (i.e., [singular]), thus the adjective becomes active early on in the derivation. The adjectival head of an AC, on the other hand, comes from the lexicon with no values for its φ-features, thus it becomes inactive until a later point in the derivation.

In a non-related language such as French, Kayne (1994) analyzes the following possessive construction as a DP:[205]

(46) la rouge, de crayon
the red of pencil

(47) le $[_{D/PP}\ [_{AP}\ rouge_j]\ [de\ [_{IP}\ crayon\ [I^0\ [e]_j$ ... (p. 106)

For Kayne, if the fronted element is an adjectival predicate, IP would have "the interpretation of a simple predicate" (p. 105), and the predication relation between the AP *rouge* and the subject noun *crayon* would be expressed within the embedded IP.

A similar structure (but with no dislocated intonation) is concerned with the fronting of the NP *imbécile* in:[206]

(48) cet imbécile de Jean
that imbecile of Jean

(49) cet $[_{D/PP}\ [_{NP}\ imbécile_j]\ [de\ [_{IP}\ Jean\ I^0\ [e]_j$ ... (p. 106)

For my analysis, such fronting shows that like nominal heads of the CS, adjectival heads can raise across the *possessor* noun, and the interpretation of possessiveness[207] can be

205 The comma represents a dislocation intonation (Kayne, 1994).
206 A counterpart from English would be:
(i) that idiot of a doctor
that $[_{D/PP}\ [_{NP}\ idiot_j]\ [of\ [_{IP}\ a\ doctor\ I^0\ [e]_j$ ... (Kayne, 1994, p. 106)
207 Notice, however, that the relationship between the adjectival head and the following noun is not

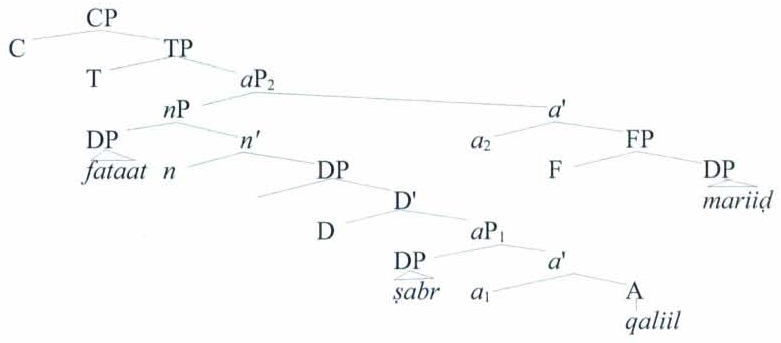
determined within the lower (defective) *a*P in (45).

Consider the following example which contains an AC in addition to a predicative adjective:

(50) al-fataat-u al-qaliil-at-u aṣ-ṣabr-i mariiḍ-at-u-n
DEF-girl-NOM DEF-little-F.S.-NOM DEF-patience(M.S.)-GEN sick-F.S.-NOM-INDEF
'the girl with little patience is sick'

The predicative adjective *mariiḍ* 'sick' modifies the subject noun *al-fataat* 'def-girl', and agrees with it in φ-features only. I propose the following structure for (50):

(51)



In (51), the subject noun *al-fataat* 'DEF-girl', as well as the AC *al-qaliil-at-u aṣ-ṣabr-i*

necessarily that of possessiveness, as has been stated.

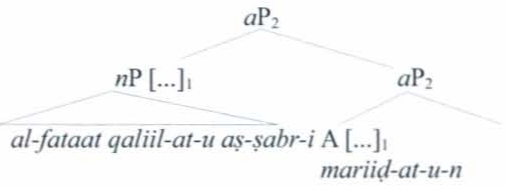
'little of patience', originates in the spec of aP_2. Like the nominal head of a CS, the adjectival head of the AC in (50) (i.e., *qaliil* 'little') is not headed by a DP. This suggests that the (in)definiteness on the adjective cannot be determined at this point in the derivation.

The derivation inside the AC (represented by *n*P) proceeds by the head adjective moving to the heads a_1, D, and then to *n*. Moving to D allows the adjective to pick up an empty slot (i.e., valueless) for the definiteness feature, which must be filled in the course of the derivation. When the adjective raises to *n*, it will have following features: an unvalued [Case] feature, unspecified set of φ-features, an unvalued definiteness feature. Under Agree, the *n*-D Probe values the [*u*Case] feature on the noun *sabr* 'patience' (genitive), and receives valuation for its unvalued φ-features.

Due to the EF on the a_2-F Probe, the predicative adjective[208] is raised to the inner spec of aP_2 (beneath *n*P). There, Scan links the subject DP *fataat* 'girl' with the raised adjective. Likewise, the raised head adjective in *n* is linked to the DP *fataat* 'girl'. Being in a single link enables the two adjectives to receive a copy of the φ-feature values of the noun *fataat* 'girl' (i.e., *feminine*, *singular*):

208 Recall that the D head of DP heading predicative adjectives usually comes with no slot for the definiteness feature, as has been assumed.

(52)



The C-T Probe then probes the subject DP *fataat*, the head adjective *qaliil*, and the raised adjective *mariiḍ*.[209] As a result of Agree, the subject DP as well as the adjectival head *qaliil* 'little' receive valuation for their [*u*Case] features (nominative), the C-T Probe receives valuation for its unvalued φ-features, and the derivation converges.

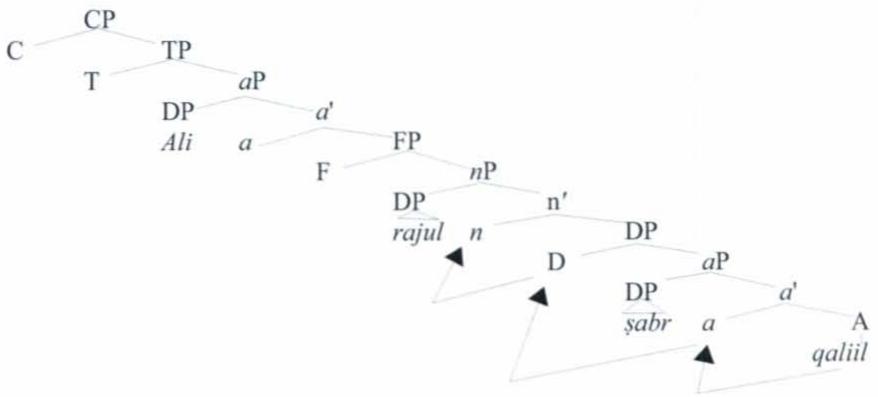
Consider the following example with two subject DPs, and no overt Case-assigner/valuer:

(53) Ali-un rajul-u-n qaliil-u aṣ-ṣabr-i
Ali-NOM man-NOM-INDEF little(M.S.)-NOM DEF-patience(M.S.)-GEN
'Ali is a man with little patience' or 'Ali is a man whose patience is little'

The adjective *qaliil* 'little' agrees with the preceding, NS DP *rajul* 'man' in φ-features, Case, and definiteness; the construction in (53) can structurally be represented as:

209 Recall that the a_2-F Probe reserves the unvalued [Case] feature on the predicative adjective (nominative).

(54)



The BS *Ali* originates in spec *a*P, while the NS *rajul* 'man' is located in spec *n*P. The head adjective *qaliil* 'little' of the AC raises to *n*. There, under Scan, the adjective shares with the NS *rajul* a copy of its φ-feature values (as well as definiteness). In *n*, the adjective as well as the NS *rajul* are probed by the *a*-F Probe. Under Agree, both elements receive valuation for their [*u*Case] features, and at the same time, the Probe receives valuation for its unvalued φ-features. The derivation converges when the BS *Ali* values the unvalued φ-features on the C-T Probe, and at the same time, receives valuation for its unvalued [*u*Case] feature.

This analysis can be extended to (55) which contains the complementizer *ʔinna* 'that':

(55) ʔinna Ali-an rajul-u-n qaliil-u aṣ-ṣabr-i
Comp Ali-ACC man-NOM-INDEF little(M.S.)-NOM DEF-patience(M.S.)-GEN
'(It is confirmed) that Ali is a man with little patience'

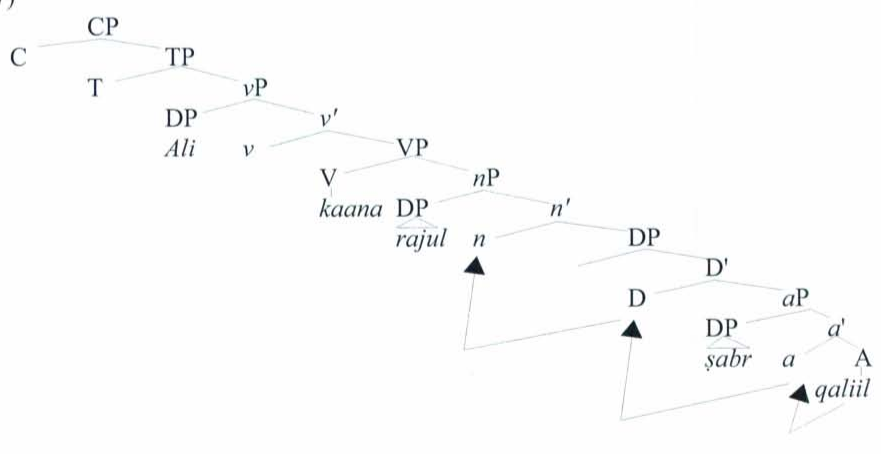
Placing the complementizer *ʔinna* 'that' in C, the representation in (54) now accounts for the distinction in Case values between the BS (i.e., accusative by *ʔinna*) and NS (i.e., nominative by the *a*-F Probe).

Consider when the verbal copula *kaana* 'was' is used:

(56) kaana Ali-un rajul-a-n qaliil-a aṣ-ṣabr-i
was Ali-NOM man-ACC-INDEF little(M.S.)-ACC DEF-patience(M.S.)-GEN
'Ali was a man with little patience'

Both the NS *rajul* 'man' as well as the head of the AC *qaliil* 'little' bear the accusative Case values by the copula. The syntactic representation for (56) is as follows:

(57)



As previously shown, in the course of the derivation the head adjective of the AC raises to *n*, where it is in a position to receive values for its unspecified φ-features, and a value for its definiteness feature (indefinite). In addition, the adjective *qaliil* 'little' (as well as the NS *rajul* 'man') receives valuation for the [*u*Case] feature (accusative).

In the next section, I introduce a type of adjective[210] referred to as *ism at-tafḍiil* 'the superlative/elative' which, like ACs, selects and modifies a genitive noun. The adjectives in this class differ from that in AC, or any other class of adjective for that matter; with respect to φ-feature values, this adjective does not show agreement with the noun it applies to. That is, it is always *masculine* and *singular.*

3.2 Adjectives in the superlative form

Superlatives in Arabic show some interesting agreement properties (relative to the nouns they modify). Consider for example:

(58)	raʔay-tu	ʔafḍal-a	al-ʔawlaad-i
	saw-I	best-ACC	DEF-boys-GEN
	'I saw the best boys'		

210 The adjectives in this type are presented in the literature as sub-type of participles (see chapter 7).

(59) ra?ay-tu ?afḍal-a al-banaat-i
saw-I best-ACC DEF-girls-GEN
'I saw the best girls'

(60) ra?ay-tu ?afḍal-a ṭalib-i-n
saw-I best-ACC student-GEN-INDEF
'I saw the best (male) student'

(61) ra?ay-na ?afḍal-a ṭalib-at-i-n
saw-we best-ACC DEF-student-F.S.-GEN-INDEF
'We saw the best (female) student'

The superlative adjective *?afḍal* 'best' maintains one form of agreement (i.e., *singular* and *masculine*) despite the obvious conflict (in φ- and Case agreement) between the adjective and the nouns it modifies: The nouns in (58) and (59) are *masculine, plural*, and *feminine, plural*, respectively. Likewise, in (60) and (61), the modified nouns are *masculine, singular*, and *feminine, singular*, respectively. The superlative adjective shows unique agreement characteristics which must be accounted for in order to have a comprehensive theory of adjectival agreement.

Recall that one type of indirect adjective[211] shows two distinct agreement patterns: agreement in the feature [Gender] with the noun it modifies, and agreement with its preceding noun in Case and definiteness. The [Number] feature on this adjective is

211 (i) ra?ay-tu rajul-a-n ṭawiil-a-n šaʕr-u-hu
saw-I man-ACC-INDEF long-ACC-INDEF hair(M.S.)-NOM-his
'I saw a man with a long hair' (example (22) on page 303)

always *singular*. For this adjective, I have made the claim that it comes from the lexicon with the value *singular* for the [Gender] feature.

Elghamry (2004)[212] concurs that definiteness on the superlative is determined by the modified noun, and uses the relative pronoun as a test: Relative pronouns are only used when the head noun of the relative clause they refer to is definite:

(62)	ʔajwad-u	al-kuttaab-i	allaðiina	ħadaruu ...	(p. 906)
	best-NOM	DEF-writers-GEN	who(3M.Pl.)	came-3M.Pl.	
	'the best of the writers who came'				

(63)	*ʔajwad-u	kuttaab-i	llaðiina	ħadaruu
	best-NOM	DEF-writers-GEN	who(3M.Pl.)	came-3M.Pl.
	'the best writers who came'			

The ungrammaticality of (63) stems from the fact that the relative pronoun *allaðiina* 'who' refers to an indefinite noun (head of the CS) *kuttab* 'writers'.

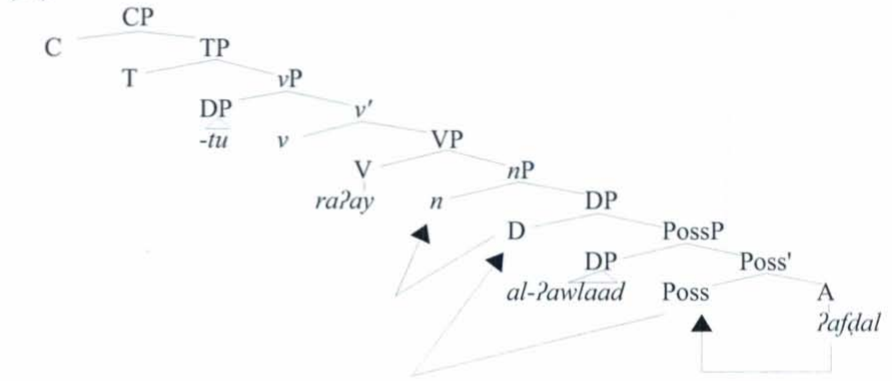
For superlatives, I will claim that in addition to bearing the value *singular*, they come from the lexicon with a *masculine* value for the feature [Gender]. Unless superlatives enter the derivation with these specific values, we would have conflicting agreement in φ-features; for instance, we would expect, contrary to facts, the adjective in (61) to show agreement with either the noun it modifies (i.e., *ṭaalib-at-i-n* 'student-F.S.' or with the

212 Elghamry analyzes superlative adjectives as quantifiers heading Quantifier Phrases.

subject pronoun *-na* 'we (M./F.).

The genitive Case value on the modified noun, as well as the non-morphological marking of definiteness on the adjective, indicates that this superlative adjective has formed a CS with the nouns it modifies. To account for this, I propose for, (58), the (by now) familiar representation:

(64)



The derivation of (58) proceeds as follows: The adjective *ʔafḍal* 'best', like any adjective head of a CS, raises to Poss, D, and then to *n*. At *n*, the adjective is probed by the *v*-V Probe, thus receiving the accusative Case for its [*u*Case] feature, and at the same time, valuing the unvalued φ-features on the Probe. The derivation then converges at LF.

Thus far, we have three types of adjectives as far as the φ-features they carry: The first

type depends *totally* on the noun it modifies (i.e., receives its φ-feature values from a nominal source). This type constitutes the majority of adjectives in Arabic. The second type, represented by one subtype of the indirect attribute, depends *partially* on the noun it modifies (i.e., the adjective comes from the lexicon with one valued φ-feature: [Number]). The third type (superlative) is independent of the noun it modifies, meaning that it comes from the lexicon with a valued set of φ-features.

Summary

This chapter introduces a set of related constructions in which adjectives show interesting syntactic and semantic agreement properties: The adjective relates semantically to one nominal element, while agreeing syntactically with a different nominal element in the structure. One of the main contributions of this chapter has been to show that Case and agreement (i.e., φ) properties can operate independently of one another.

Adjectives in AC constructions have much in common with their corresponding nominal heads in CS: In the course of the derivation, they raise multiply to reflect the correct word order as well as to receive the correct values of Case, definiteness, and φ-agreement.

Thus far, Arabic adjectives can be divided into three types, as far as φ-agreement features are concerned. Type (i) comes from the lexicon with no valued φ-features (i.e., the type

introduced in Zero Copula constructions); type (ii) enters the derivation with one valued φ-feature (i.e., the feature [Number] in AC); the adjective in type (iii) seems to come from the lexicon with valued φ-features (i.e., valued [Number] and [Gender] features in the superlative form).

In the next chapter, more adjective-containing constructions will be considered. The principal objective of the following chapter is to provide an analysis of a different type of adjective (i.e., participles). Participles exhibit some verbal as well as nominal characteristics. In a subsection, I will introduce a common word class to participles known in the Arabic literature as *maṣdar*. One objective of including maṣdars is to find the similarities and highlight the differences between these word classes and the constructions they appear in before an Agree-based analysis is formalized for each word class.

Chapter 7

Participles and Maṣdars

1. Introduction

Participles in Arabic constitute one major class of adjectives. In this chapter, an Agree-based analysis will be developed for this type of adjective. It will be shown that participles have a lot in common with a nominal class of words known in traditional reference books as *maṣdar*.

The chapter begins by considering participles, their classes, semantic properties, and syntactic distribution. In a following subsection, an Agree-based analysis which accounts for these properties is laid out. To conclude this section, I provide an overview of selected analyses of Arabic participles.

Section 3. of this chapter is concerned with maṣdars. It will be shown that maṣdars can have a verbal function, in addition to their nominal function. For each function, an Agree-based analysis, which builds on the arguments that have been developed up to this point will be proposed. As in the participle section, some selected analyses of Arabic maṣdars are discussed by way of conclusion.

2. *Participles*

Traditional Arab grammarians include a large number of adjectives within the larger class of derived nominals or *muštqaat.*[213] The subclasses of adjectives in this major class are either verbally- or nominally-derived. Researchers such as Al-Shamrani (1994) state that Arabic participles are verbally-derived adjectives.

Participles constitute one major class of adjective. According to Al-Shamrani (1994), Arabic participles include the following classes:

Table 1

Classes of participles

	Class	Meaning	Example
1	*ism alfaaʕil* 'Active participle'[214]	This subclass is understood as denoting the "doer of the action of the corresponding verb" (Al-Shamrani, 1994, p. 9).	The word *raakib* 'rider, the one who rides a bus or a horse' corresponds to the verb *rakiba* 'to ride (a bus), he rides (the bus)' which denotes the act as well as the person who does the

213 Some grammarians add *asmaaʔ al-makaan* 'Nouns of Place' and *asmaaʔ az-zamaan* 'Nouns of Time' to the list of *muštaqaat*; however, these two types are not adjectival.

214 In their analysis of *ism al-fiʕl* 'the Active Participial', Hasan (1976) and others, have treated this subclass of adjectives as an independent class of adjectives: *aṣ-ṣifah* 'the adjective' since it shows both nominal and verbal features. However, Al-Shamrani (1994) and others do not agree with this classification of Active Participials as an independent class of adjectives since such classification would legitimize the inclusion of *maṣdars* 'deverbal nouns' into a separate word class since they take a subject as well as an object just like verbs.

			'riding'.
2	*aṣ-ṣifah al-mušabahah bi ism al-faaʕil* 'The Active Participle-like attribute'	This subclass indicates an attribute that has stative (invariable) condition or meaning.	The words *fariħ-u-n* 'happy' and *ħasan-u-n* 'good' are derived from the intransitive verbs of *fariħa* '(he) became happy' and *ħasuna* '(he) became good), respectively. As far as the morphology, this subclass does not follow one regular morphological pattern, as some of the derived adjectives of this subclass follow some morphological patterns associated with the Active participle.
3	*ism al-mafʕuul* 'the Passive Participle'	This subclass of adjectives denotes the action and the one or thing gets affected by this action (i.e., undergoer of the action).	The word *maʔkuul* 'eaten' is a *passive participle* which is derived from the verb *ʔakala* '(he) eats'. (Notice that the Active Participle word derived from this verb is *ʔaakil* 'eater').
4	*ṣiyaɣ al-mubalaɣah* 'Forms of Intensity'	The words in this subclass intensify the action performed by the relevant verb.	For the verb *ʔakala* 'eats', the form of intensity associated with this verb would be *ʔakkaal*, thus referring to a person who eats a lot or one with compulsive eating disorder. Similarly, the intensive form of

			the verb *kaðaba* '(he) lies' is *kaððaab*, meaning that this person is 'a frequent liar', or someone who is lying too much.
5	*ism at-tafḍiil* 'the Elative'[215]	When comparing two persons or entities sharing the same property, the form *ism at-tafḍiil* is used.	For the property *ṭawiil* 'tall', if Ali is taller than Jamal, we can say *Ali aṭwal min Jamal* 'Ali is taller than Jamal'.[216]

Both traditional and contemporary researchers (e.g., Al-Nadiri, 2005; Hasan, 1976) have observed that participles exhibit semantic and syntactic similarities with verbs, in that they take subjects and are able to assign accusative Cases to their objects. In addition, participles exhibit formal similarities with ordinary nouns and adjectives; specifically, they inflect for Case, agreement, and definiteness. Consider the following example:

(1) al-walad-u ʔaakil-u-n aṭ-ṭaʕaam-a
DEF-boy-NOM eating(M.S.)-NOM-INDEF DEF-food-ACC
'The boy is eating the food'

The participle *ʔaakil* 'eating(M.S.)' in (1) is one type of verbally-derived adjectives. In this example, the participle applies to the subject noun *al-walad* 'DEF-boy', and appears to agree with it in Case, [Number], and [Gender], but not definiteness: The participle is indefinite. The noun which follows the participle bears an accusative Case value, a fact

215 Due to the resemblance this structure shows with the AC, it has been introduced and analyzed in the last chapter.

216 However, other derived words require the use of the word *ʔakθar min* or *ʔaqal min* 'more than' or 'less than', respectively, when making a comparison.

which leads traditional grammarians (e.g., Hasan, 1976) to conclude that, like verbs, participles can be a source for the accusative Case values on the following objective nouns.

Also, the participle *ʔaakil* 'eating(M.S.) itself bears a nominative Case value, just like any other nominal or adjectival element. Consider the Case value on the participle *ʔaakil* 'eating(M.S.)' in (2) when the copular verb *kaana* 'was' is used:

(2) kaana al-walad-u ʔaakil-a-n aṭ-ṭaʕaam-a
was DEF-boy-ACC eating-ACC-INDEF DEF-food-ACC
'the boy was eating the food'

The participle behaves like an objective element which receives an accusative Case value from *kaana*.

Al-Shamrani (1994) uses the intensifier *jiddan* 'very', as a test, to show the semantic similarity between verbs and participles. Consider the following examples:[217]

(3) ṭ-ṭifl-u mariiḍ-un jiddan
def-child sick(Adj) very
'The child is very sick' (p. 26)

217 Glossing and transliteration are Al-Shamrani's.

(4) mariḍa ṭ-ṭifl-u jiddan
fell sick(V) def-child very
'The child became very sick' (p. 27)

According to Al-Shamrani, the adjective *mariiḍ* 'sick' and the verb *mariḍa* 'fell sick' of the type in (3) and (4) are both grammatical with the intensifier *jiddan*; however, other types of participles and verbs are not, as in:

(5) *l-mujrim-u qaatil-un jiddan (p. 27)
def-murderer killing(Adj) very

(6) *qatala l-mujrim-u jiddan (p. 27)
killed def-murderer very

Al-Shamrani ascribes the ungrammaticality of examples (5) and (6) to the fact that they are incompatible with the intensifier *jiddan*, and argues that only verbs and adjectives which are [+stative] (i.e., show an unchanging, permanent state) can be used with this intensifier.

In terms of argument structure, participles behave like the verbs (whether transitive or intransitive) from which they are derived. For example, the participle *muʕtin* 'giving' in (8) is derived from the transitive verb *ʔaʕṭa* 'gave' in (7):

(7) ʔaʕṭa al-mudaris-u aṭ-ṭaalib-a kitaab-a-n
gave(3M.S.) DEF-teacher-NOM DEF-student-ACC book-ACC-INDEF
'The teacher gave the student a book'

(8) al-mudaris-u muʕṭin aṭ-ṭaalib-a kitaab-a-n
DEF-teacher-NOM giving DEF-student-ACC book-ACC-INDEF
'The teacher (is giving) the student a book'
Lit. 'The teacher giving the student a book'

Like its corresponding verb, the participle *muʕṭin* 'giving' in (8) subcategorizes for two object NPs: *aṭ-ṭaalib* 'DEF-student' and *kitaab* 'book', as can be inferred from the accusative Case values on these nouns.[218]

Also, when forming passives, verbs and participles show further similarities; compare the verbs in examples (9) and (10) with the participles in (11) and (12):

(9) qaraʔa al-walad-u ar-risaal-at-a
read(3M.S.) DEF-boy-NOM DEF-letter-F.S.-ACC
'The boy read the letter'

(10) quriʕ-at ar-risaal-at-u
read(Pass.)-F.S. DEF-letter-F.S.-NOM
'The letter was read'

Note that when the verb passivizes, the subject noun is suppressed, and the object

218 Al-Shamrani (1994) adds that, like verbs, participles can assign theta-roles to their arguments.

becomes a derived subject (notice also the change in Case values). Now consider the participles *qaariʔ* 'reading' and the passivized form *maqruuʔ* 'read(Pass.)' in the following examples:

(11) al-walad-u qaariʔ-u-n ar-risaal-at-a
DEF-boy-NOM reading(3M.S.)-NOM-INDEF DEF-letter-F.S.-ACC
'The boy is reading the letter'

(12) ar-risaal-at-u maqruuʔ-at-u-n
DEF-letter-F.S.-NOM read(Pass.)-F.S.-NOM-INDEF
'The letter (is/was) read'

When the participle *qaariʔ* 'reading' is passivized, the structure exhibits the same changes its corresponding verb shows: The subject *al-walad* 'DEF-boy' is suppressed, and the object *ar-risaalah* 'DEF-letter' becomes a derived subject, as in (12).

Another interesting property of participles concerns their ability to form a CS-like construction with their following nouns, just like pure/ordinary *stative* adjectives, as can be seen in (13):

(13) l-walad-u daariḍ-u l-ʔax-i
def-boy-nom hitting-nom def-brother-gen
'The boy hits his brother'
Literally: 'The boy hitting the brother' (Al-Shamrani, 1994, p. 36)

The participle *daariḍ* 'hitting' selects the genitive noun *l-ʔax-i* 'def-brother-gen', forming a CS-like construction (cf. the AC in the previous chapter). An alternative to (13) shows that the noun *ʔax* 'brother' bears the accusative Case value, indicating that it is an object to the participle:

(14) l-walad-u daariḍ-u-n ʔax-aa-hu
def-boy-nom hitting-nom-indef brother-acc-his
'The boy is hitting his brother'
Literally: 'The boy hitting his brother' (Al-Shamrani, 1994, p. 36)

One difference, however, between stative adjectives and participles is that non-stative (participle) adjectives form a CS construction with their objects, while stative adjectives form a CS construction with their subjects.[219]

To recap, the above data shows that Arabic participles have a dual nature: Formally, they resemble nominal (and adjectival) elements in that they inflect in for Case, agreement, and definiteness; syntactically, they can form CS-like constructions with the following nouns. Participles behave like the verbs they are derived from (e.g., they show passivity and (in)transitivity), and they are able to assign accusative Case values to their objects.

219 The stative adjective *jamiil* 'beautiful' forms a CS with the following noun *al-wajh* 'def-face':
(i) al-fataat-u jamiil-at-u al-wajh-i
DEF-girl-NOM beautiful-F.S.-NOM DEF-face-GEN
'The girl has a beautiful face'
Literally: 'The girl is beautiful of face'
Note the nominative Case value on the noun *wajh* 'face' in the alternate example of (i):
(ii) al-fataat-u jamiil-u-n wajh-u-ha
DEF-girl-NOM beautiful(M.S.)-NOM-INDEF face-NOM-her
'The girl's face is beautiful'

To account for the dual characteristics of participles, I propose an Agree-based analysis for this type of adjectives.

2.1 An Agree-based analysis

As observed in section 2., participles in Arabic show some similarities with verbs: they take subjects and assign accusative Cases to their objects. Also, participles show similarities with ordinary nouns: they inflect for Case and agreement as well as definiteness. Consider the example in (1), repeated here as (15):

(15)	al-walad-u	ʔaakil-u-n	aṭ-ṭaʕaam-a
	DEF-boy-NOM	eating(M.S.)-NOM-INDEF	DEF-food-ACC
	'The boy is eating the food'		

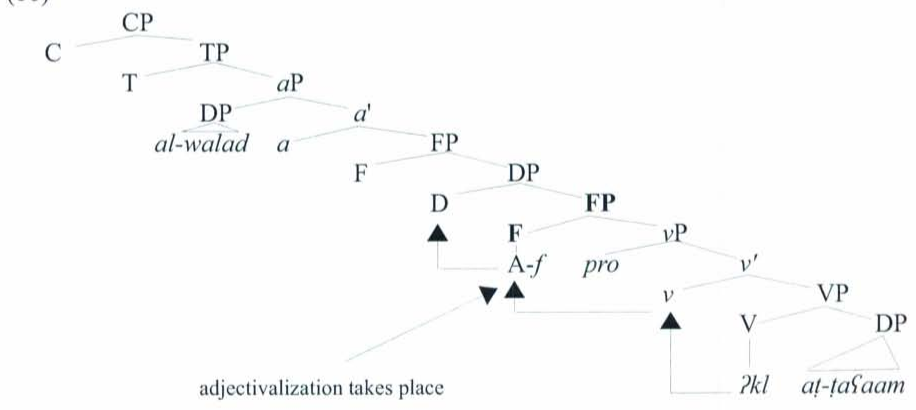
The participle *ʔaakil* 'eating(M.S.)' agrees with the subject noun *al-walad* 'DEF-boy' in Case (both are nominative), [Number] (both are *singular*), and [Gender] (both are *masculine*), but not definiteness (the participle is indefinite). The accusative Case value on the noun *aṭ-ṭaʕaam-a* 'DEF-food-ACC' comes from the participle.

Besides acting like a verb, the participle behaves like any other nominal or adjectival element, and can form a CS-like construction with the following noun (see, example (13),

above). To account for the dual nature of participles, I follow Fassi-Fehri (1993) and argue that participles start out as verbs in their syntactic derivation and become adjectives at some (higher) point in the derivation. Also, inspired by Fassi-Fehri's (1993) analysis for maṣdars,[220] I assume the existence of a special, semantic feature which converts a verbal root into an adjectival root in the course of the derivation. This semantic feature originates under a specific head in the structure, and the verbal root (of the participle) becomes adjectival (or participial) once it moves to that head. I will refer to this feature as the A-*f* feature (adjectivalizer feature.[221])

Keeping this in mind, let us consider the following representation for (15):

(16)



In (16), the subject noun *al-walad* 'DEF-boy' originates in spec of the phasal adjectival

220 Masdars are introduced in section 3..
221 Cf. event-affix (E-Af) in Fassi-Fehri's analysis for maṣdars.

projection (*a*P). The proxy head F (of the phase head *a*) selects a DP. I assume that the head D (of this DP) does not bear a slot for the definiteness feature, meaning that it will surface morphologically as *indefinite*. Also, this D head selects a functional projection (bold-faced **FP**), which carries the adjectivalizer feature A-*f*. Besides bearing the A-*f* feature, the head **F** functions as the host position to which the verbal root moves, as will be explained shortly.

The *v*P phase in (16) is different from any other *v*P phase we have yet encountered. The spec position of *v*P is occupied by a small *pro*. This structure is motivated by adopting Burzio's Generalization (Burzio, 1986), which states that a verb which lacks an external argument fails to assign accusative Case. Locating a *pro* in spec *v*P allows the verb in this phase to value the [*u*Case] on the DP *aṭ-ṭaʕaam* 'DEF-food', and avoids violating Burzio's Generalization.

I further assume that *pro* in spec *v*P receives the agent theta-role from *v*. To ensure that this theta-role is assigned to the subject noun *al-walad-* 'DEF-boy' in spec *a*P, I follow Chomsky's (1981) analysis of *tough*-movement. Consider the example in (17) which has the basic structure in (18):

(17) John is tough to find

(18) John is tough [$_{CP}$ PRO$_i$ [$_{IP}$ PRO$_{arb}$ to find t$_i$]

Chomsky argues that the embedded phrase *to find* undergoes *wh-movement* type movement. When the adjective *tough* takes a clausal complement, it does not assign a theta-role to its matrix subject (i.e., *John*). Rather, the trace t_i (of PRO) in (18) in the complementizer position receives a theta-role from the verb *find*. The combination of the complex predicates of the adjective *tough* and the open proposition of CP assign a theta-role to the subject noun *John*.

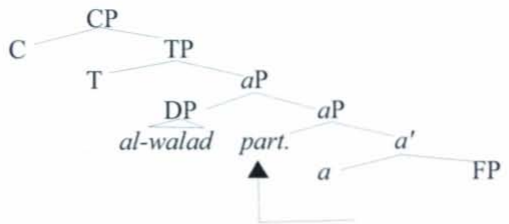
I have proposed that the phasal head *a* of *a*P is able to assign a theta-role to its external argument. For this structure, I will maintain this idea and additionally assume, following the *tough*-movement analysis, that the theta-role of the DP *al-walad* 'DEF-boy' is assigned by the head *a* in combination with *v*P. The derivation of the structure in (15) proceeds as follows. At the *v*P level, *v* selects V, and the *v*-V Probe is formed, under the FI model. Under Agree, the Probe *v*-V probes for a Goal and finds the DP *aṭ-ṭaʕaam* 'DEF-food'. The *v*-V Probe receives valuation for its [*u*φ] features, and at the same time, values the [*u*Case] feature on the object (accusative). The verbal root *ʔkl* moves to *v*, and then to **F** which carries the feature A-*f*. At this point, the verbal root is converted into an adjectival (participial) root. Up to this point, I assume that the participle in **F** behaves like an ordinary adjective (of the non-Construct type), which has just entered the derivation from the lexicon. The latter assumption is supported by Case, φ-agreement, and definiteness considerations; that is, the participle in **F** bears an [*u*Case] and a set of value-less φ-features. The [*u*Case] must be valued by Agree, and the empty slots for its φ-features

(i.e., [Number] and [Gender]) must receive values from another (nominal) source. Also, definiteness on the participle adds further support to this assumption; in other words, knowing that only nominal and adjectival elements in Arabic bear (in)definiteness markers, it follows quite naturally that the participle (not the verb) moves to D, indicating that the conversion of the verbal root into an adjectival (or participial) root should occur prior to the movement of this element to D.

Thus, the participle moves higher to D (recall that D does not have a slot for the definiteness feature), so that the morphological realization of definiteness on this participle will be indefinite.

At the *a*P phasal level, the head *a* selects the proxy head F and transfers all of its features to F (features include [CASE], [*u*φ], and EF), and the *a*-F Probe is formed. This probe searches for a Goal, and finds the participle in D. Given that the participle lacks values for its φ-features, it cannot serve as a Goal for this Probe; however, under Case-R, the Probe *a*-F reserves the Case value on the participle (nominative). The EF on *a*-F raises the participle to the inner spec of *a*P, as in:

(19)



The participle becomes structurally close to the subject DP *al-walad* 'DEF-boy' (i.e., no other potential source for φ-feature values intervenes between them). Under Scan, the subject noun *al-walad* 'DEF-boy' shares a copy of its φ-values with the participle (i.e., [masculine], [singular]). The participle transfers a copy of these φ-values to its original copy in D, thus allowing the Probe *a*-F to receive valuation for its unvalued φ-features, and consequently, the reserved Case value on the participle is that which is realized morphologically. At the CP level, the [*u*Case] feature on the subject noun *al-walad* 'DEF-boy' receives valuation from the C-T Probe; likewise, the unvalued φ-features on the Probe receive valuation from the subject, and the derivation converges.

The complementizer *ʔinna* can precede the construction in (15). The complementizer changes the Case value on the subject to accusative as in (20):

(20)	ʔinna	al-walad-a	ʔaakil-u-n	aṭ-ṭaʕaam-a
	Comp	DEF-boy-ACC	eating(M.S.)-NOM-INDEF	DEF-food-ACC
	'(It is confirmed) that the boy is eating the food'			

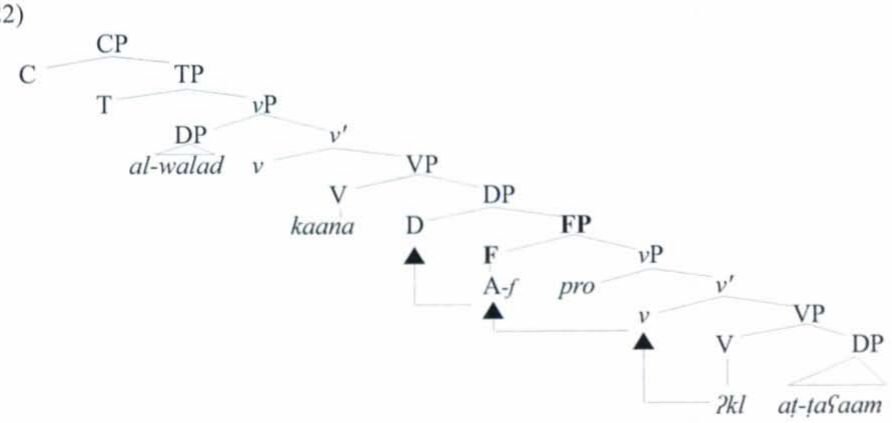
The representation in (16) works well for this example provided that the complementizer *ʔinna* 'that' is placed under C, as has been argued for throughout this thesis.

Notice, however, that when an auxiliary verb is used, the Case value on the participle becomes accusative as in (2), repeated here as (21). Furthermore, notice that the objective noun *aṭ-ṭaʕaam* 'DEF-food' always bears an accusative Case value:

(21)	kaana	al-walad-u	ʔaakil-a-n	aṭ-ṭaʕaam-a
	was	DEF-boy-NOM	eating(M.S.)-ACC-INDEF	DEF-food-ACC
	'the boy was eating the food'			

For (21), I propose the following representation:

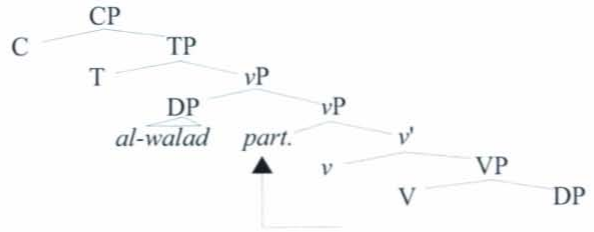
(22)



In this representation, there are two phasal *v*Ps. The subject noun *al-walad* 'DEF-boy' originates in the spec position of the higher *v*P phase. The external argument of the lower *v*P phase is filled by a small *pro*. The derivation proceeds as follows. The phasal head *v* selects V (which includes the verbal root *ʔkl*), and forms the *v*-V Probe. The Probe *v*-V probes the DP *aṭ-ṭaʕaam* 'DEF-food' and values its [*u*Case] accusative feature, and simultaneously, receives valuation for its [*u*φ] features. The verbal root V moves to *v* and then to **F**. In **F**, the verbal root converts into an adjectival (particularly, participial) element by virtue of the (adjectivalizer) A-*f* feature. The participle at this point behaves like an adjective which has just entered the derivation; that is, it bears an [*u*Case] feature in addition to a set of value-less φ-features. The participle then moves higher to D (recall that D does not bear a slot for the definiteness feature).

At the higher *v*P level, the *v*-V Probe probes for a Goal and finds the participle in D. Since that the participle does not have values for its φ-features, it cannot serve as a Goal; however, Case-R allows the Probe *v*-V to reserve the Case value on the participle (accusative). The EF on the *v*-V Probe raises the participle to the inner spec of the higher *v*P phase, as in:

(23)



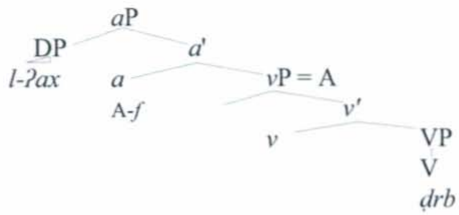
At this point in the derivation, and under Scan, the subject noun *al-walad* 'DEF-boy' can share a copy of its φ-values with the raised participle. The participle then shares a copy of the received values with its original position (in D), allowing the *v*-V Probe to receive valuation for its unvalued set of φ-features, and the reserved Case value on the participle is morphologically realized as accusative. The derivation then converges when the C-T Probe receives valuation for its unvalued φ-features by entering into Agree with the subject noun *al-walad* 'DEF-boy'. At the same time, the subject receives valuation for its [*u*Case] feature (nominative).

We have seen that participles are able to form CS-like constructions with their objects. Consider the example in (13), repeated here as (24):

(24) l-walad-u ḍaarib-u l-ʔax-i
def-boy-nom hitting(M.S.)-nom def-brother-gen
'The boy hits his brother'
Literally: 'The boy hitting the brother' (Al-Shamrani, 1994, p. 36)

The participle *ḍaarib* 'hitting(M.S.)' in this example selects a genitive DP; in this respect, it resembles AC (discussed in chapter 6). Consider the internal structure of the participle (in A) in (25):

(25)



The internal structure of the participle in (25) shows that it starts under the lexical root V. Note that the *v*P heading this root does not have an external subject, thus, under Burzio's Generalization, it does not have the ability to assign accusative Case. From this, we infer that no Probe (e.g., *v*-V) will be formed.

The lexical V undergoes various steps of movement: First, it raises to *v* and then to *a*. The adjectival element *a* bears the [A-*f*] feature, which converts V into an adjectival/participial element, as previously argued.

The participle, which now bears unspecified set of φ-features and an [*u*Case] feature, continues to move up to the head D. Crucially, recall that in AC, Scan is argued not apply until a certain point in the derivation. This ensures that only the correct φ-feature values are shared (i.e., between the participle and the subject DP *al-walad* 'DEF-boy').

Thus, when raised to D, the participle picks up a copy of the [definite] value for the definiteness feature on the genitive noun *ʔax* 'brother' in spec *a*P. Finally, the participle moves to the head *n*. In the AC chapter, it has been argued that the *n*-D Probe values the genitive Case value on the noun *ʔax* 'brother', under Agree.

At *n*, the participle becomes structurally close enough to the subject noun *al-walad* 'DEF-boy' to receive values for its φ-features (under Scan). Also, at *n*, the participle, in addition to the subject, get probed by the C-T Probe. As a result of Agree, both the subject *al-walad* and the participle *ḍaarib* receive valuation for their [*u*Case] features (nominative), and the C-T Probe receives valuation for its unvalued φ-features.

Having laid out my own analysis, I now present, for comparative purposes, analyses of Arabic participles by Fassi-Fehri (1988, 1993), and Al-Balushi (2011). For (26), Fassi-Fehri (1988) argues that the affix *-an* on the participle *raakiban* 'riding' is a pronominal subject for the participial AP. According to Fassi-Fehri, this pronominal subject "can be controlled (ambiguously) by the subject or the object of the matrix verb" (p. 137):

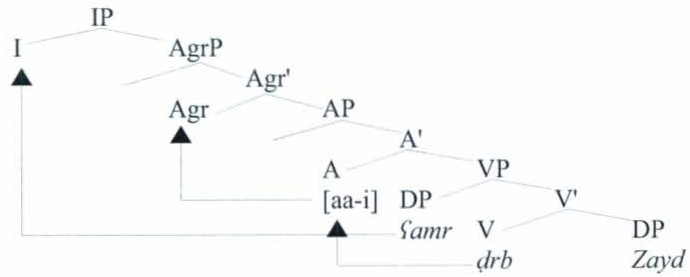
(26)	laqii-tu	Zayd-an	raakiban
	met-I	Zayd	riding.MS(Acc)
	'I met Zayd riding'		

Fassi-Fehri (1993) proposes an analysis of the internal structure of participle adjectives such as *ḍaarib* 'hitting' in example (27) below:

(27) ʕamr-u-n ḍaarib-un Zayd-a-n l-ʔaan/ ɣadan
Amr-NOM-INDEF hitting-NOM-INDEF Zayd-ACC-INDEF now/tomorrow
'Amr is hitting/ will hit Zayd'

Specifically, participles such as *ḍaarib* are deverbal, and as such, they are derived as shown in the following structure:

(28)



In (28), the participle's consonantal root originates in V and moves to A, where it is adjoined to the vocalic skeleton *aa-i*. The trace of V assigns accusative Case to Zayd. The subject *ʕamr* moves to spec I to receive nominative Case. Fassi-Fehri (1993) claims that the complex [[[V]A]Agr], which is formed by adjoining V to A, and V A to Agr, is adjectival. This complex receives nominative Case which is assigned by default to AP and passed/transferred down to A.

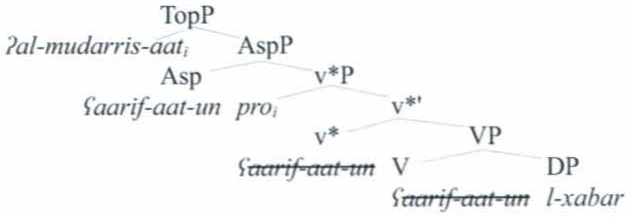
A more recent analysis of Case behaviour in Arabic participles has been developed by Al-Balushi (2011). Al-Balushi extends his analysis of Case assignment/checking in both verbal and non-verbal constructions to participials. In his characterization of participials, he claims that they do not encode a [T] feature; thus, no tense category is expected to appear[222] in their syntactic structure. He also claims that participials do not (exclusively) denote future tense, and thus lack a MoodP, where mood refers to "futurity" (p. 264).

Al-Balushi adds that participials cannot project an AgrP since they lack a full set of unvalued φ-features (p. 265). They do, however, encode an [Asp] feature (imperfective aspect), which is not encoded for a Verbal Case [VC] feature[223] (p. 266). He thus proposes the representation in (30) for (29):[224]

(29)	ʔal-mudarris-aat-u	ʕaarif-aat-un	l-xabar-a
	the-teachers-p-f-Nom	knowing-p-f-Nom	the-news-Acc
	'the female teachers know the news'		

222 For him, participles only bear a default temporal interpretation (i.e., non-past) (p. 263).
223 The basics of Al-Balushi's analysis have been presented in chapter 3.
224 Glossing and transliteration of this example are Al-Balushi's.

(30)



(Al-Balushi, 2011, p. 273)

Under (30), the participial is merged in V with a valued categorial [V] feature.[225] The head *v** has an unvalued [VC] feature, and merges with VP. *Pro* is merged in spec v*P, where it can license the topic *ʔal-mudarris-aat* through co-indexation.

The valued [V] feature on the participial is projected to *v**P. Now, *v**P has a valued [V] feature, and as such it is selected by Asp (which has an unvalued [V] feature, a valued [Asp] feature, and a set of valued φ-features). Under Agree, the unvalued [V] feature on Asp gets valued.

To this point, the participial has both nominal and verbal features (i.e., it has a valued [V] feature, and valued φ-features). The AspP, which is instantiated by the participial, is selected by Fin.[226] Fin has an unvalued categorial [V] feature, an unvalued [Asp] feature, an unvalued set of φ-features, and a valued [VC] feature. Under Agree between Fin and

225 Al-Balushi argues that participials start out as roots with no category (just like verbs), but they then merge with a v head. By merging with v, they are turned into verbs. These verbs, then, merge with a nominalizing head which turns them into "quasi-nominal elements" (p. 267).

226 Notice that although FinP is not represented in Al-Balushi's original schematic representation in (30), from the discussion he presented, we could infer that it is placed between TopP and AspP.

Asp, the unvalued features (i.e., [φ], [V], and [Asp]) on Fin get valued.

Al-Balushi adds that the head v^{*0} enters into Agree with Fin^0; as a result, the unvalued [VC] on v^{*0} gets valued by Fin^0. The object receives valuation for its [Case] (i.e., accusative) through an Agree relation with v^{*0}. The topic, however, receives a default nominative Case at PF. *Pro* in participials, like *pro* in verbless sentences, does not receive nominative Case, unlike *pro* in SVO sentences (p. 274).

To recap, the above data shows that Arabic participles have a dual nature: Formally, they resemble nominal (and adjectival) elements in that they inflect in for Case, agreement, and definiteness. Syntactically, they can form CS-like constructions with the following nouns. Participles behave like the verbs they are derived from (e.g., they show passivity and (in)transitivity) in that they are able to assign accusative Case values to their objects.

I now present *maṣdars,* a different word class of Arabic.

3. Maṣdars

We have just considered one subclass of *muštaqaat*, participles, or more specifically, verbally-derived adjectives. In this section, I consider a second subclass of *muštaqaat*: nominally-derived.

Nominally-derived words are known in the literature as *deverbal nouns* (see, e.g., Fassi-Fehri, 1993; Kremers, 2003). Grammarians who follow the traditional Baṣran school of language identify one form of nominals (maṣdars) as the base form from which verbal (and adjectival) words are formed. However, following the traditional Kufan school of language, other grammarians argue that the maṣdar is derived from the verb, but not vice versa (see, e.g., Hasan, 1976; Ibn Abi Alwafa, [n.d.].[227])

The maṣdar often indicates an event that is stripped of time (i.e., timeless event), for which reason it is often referred to as an 'infinitive' by western philologists; however, unlike infinitives (which are verbal), maṣdars are nominal. For example, the verb *qatala* 'he killed', which indicates an action which takes place in the past tense, is derived from the maṣdar *qatl* 'killing'.[228] Also, the verb *fataha* 'he opened' is derived from the maṣdar *fath* 'opening'.

In terms of function and syntactic properties, maṣdars can have a verbal-like function, in addition to their nominal function. When the verbal function is observed, maṣdars behave like gerunds in English. Verb-like maṣdars are also called "*process nominals*" (Fassi-Fehri, 1993), or "*complex event nominals*" (Kremers, 2003.[229]) In their more nominal

227 Baṣran and Kufan schools of language flourished in ancient Iraq.

228 I will follow the literature and gloss *maṣdars* with English gerundive ending *-ing*.

229 Kremers follows the classification proposed in Grimshaw (1990). Grimshaw (1990) discusses two types of deverbal nouns: Complex event nominals (which retain verbal event and argument of the underlying verb) and simplex event nominals (which do not retain the event and argument of the underlying verb). Simplex event nominals can be said to refer to an event or result nominal, if they refer

function, maṣdars can be seen to be what Grimshaw (1990) terms a "*simplex event*" (see, fn. 229), or what Fassi-Fehri (1993) refers to as "*result nominals*". The following sections introduce the nominal and verbal use of maṣdars.

3.1 Nominal function

Morphologically, the maṣdar resembles ordinary nominal (and adjectival) elements in that it inflects for agreement features, and bears (in)definiteness markers in addition Case values. Consider the following examples:[230]

(31)	qiraaʔ-at-u-n	al-qairaaʔ-at-u
	reading-F.S.-NOM-INDEF	DEF-reading-F.S.-NOM
	'A reading'	'The reading'
(32)	waḍʕ-u-n	al-waḍʕ-u
	state(M.S.)-NOM-INDEF	DEF-state(M.S.)-NOM
	'A state (of affairs)'	'The state (of affairs)'

Also, like ordinary nouns, maṣdars can be pluralized, as seen in the following examples:[231]

to the result of an action or event. Simplex event nominals resemble non-event nominals (ordinary nouns).

230 Note that when a maṣdar, such as *ṣidq(M.S.)* 'real', is used as an (adjectival) modifier for a noun, it always bears [masculine] and [singular] features, regardless of the agreement features carried by the modified noun (Al-Nadiri, 2005).

231 Verb-like maṣdars (i.e., *process* or *complex event nominals*) cannot be pluralized, as can be seen from the ungrammaticality of the following example:

(33)	qiraaʔ-at-u-n	qiraaʔ-aat-u-n
	reading-F.S.-NOM-INDEF	reading-F.Pl.-NOM-INDEF
	'A reading'	'Readings'

(34)	waḍʕ-u-n	ʔawḍaaʕ-u-n
	state(M.S.)-NOM-INDEF	state(M.Pl.)-NOM-INDEF
	'A state (of affairs)'	'states (of affair)'

The maṣdar *qiraaʔ-at-u-n* 'reading(F.S.)' takes the plural ending *-aat* to form the sound plural *qiraaʔ-aat-u-n* 'reading(F.Pl.)'.

In terms of distribution, a maṣdar occurs in positions usually occupied by nouns (i.e., subject, object, etc). Consider the following:

(35)	qiraaʔ-at-u	al-kitaab-i	mumtiʕ-at-u-n
	reading-F.S.-NOM	DEF-book-GEN	fun-F.S.-NOM-indef
	'reading the book is fun'		

(i)	*tamm-at	ʕtiraaf-aat-u-hu	bi-ð-ðanb-i
	happened-f.	Confessing-f.pl.-nom-him	with-def-crime-gen
	'His confessions of the crime have taken place'		(Fassi-Fehri, 1993, p. 236)

When functioning as a verb-like, the maṣdar *ʕtiraaf-aat* cannot be pluralized. Notice, however, that the same maṣdar can form a plural form provided that it functions as *simplex event* or *result nominal:*

(ii)	ʕtiraaf-aat-u-hu	ɣayr-u	muqniʕat-in
	confessions-f.pl.-nom-him	not-nom	convincing-gen
	'His confessions are not convincing'		(Fassi-Fehri, 1993, p. 236)

(36) laʕib-u al-kurat-i xaṭiir-u-n
playing(M.S)-NOM DEF-football-GEN dangerous-NOM-INDEF
'playing football is dangerous'

The maṣdars *qiraaʔah* 'reading(F.S.)' and *laʕib* 'playing(M.S.)' are in the subject position of the verbless sentences. The fact that the maṣdars in (35) and (36) can be modified by the adjectives *mumtiʕ* 'fun' and *xaṭiir* 'dangerous', respectively, indicates that they are simplex event nominals, for simplex event nominals cannot be modified by an adverb, as shown by the ungrammaticality of using the adverbial element *bi-šiddat-in*:

(37) ʔaqlaqa-nii ntiqaad-u-hu (*bi-šiddat-in) (Fassi-Fehri, 1993, p. 234)
annoyed-me criticizing-nom-his with-violence-gen
'His criticism (**with violence)* annoyed me'

Like ordinary nouns, the maṣdar can also appear in object position:

(38) ʔaħbab-tu qiraaʔ-at-a al-kitaab-i
loved-I reading-F.S.-ACC DEF-book-GEN
'I loved (the) reading of the book'

Here, the maṣdar *qiraaʔah* 'reading' serves as the object of the verb *ʔaħbab-tu* 'I loved' (notice the accusative Case value on the maṣdar).

From the examples above, we see that maṣdars, like ordinary nouns, can select genitive

possessives. Consider the example in (35), repeated here as (39):

(39)	qiraaʔ-at-u	al-kitaab-i	mumtiʕ-at-u-n
	reading-F.S.-NOM	DEF-book-GEN	fun-F.S.-NOM-INDEF
	'reading the book is fun'		

The maṣdar *qiraaʔah* forms what looks like a CS construction with the following noun *al-kitaab-i* 'DEF-book-GEN'. Like a nominal (or adjectival) head of a CS, the maṣdar in (39) does not bear the (in)definiteness marker, and the following noun bears a genitive Case value.

3.2 Verbal function

Maṣdars differ from ordinary nouns by virtue of the fact that they can function as verbs. For example, only maṣdars can serve as a complement to a verb (e.g., the control verb *ħawal-tu* in (40)), which semantically selects a verbal complement:

(40)	ħawal-tu	qiraaʔ-at-a	al-lawħ-at-i
	tried-I	reading-F.S.-ACC	DEF-sign-F.S.-GEN
	'I tried to read/reading the sign'		

In traditional Arabic literature, if a verb is intransitive then its maṣdar can assign nominative Case to its subject:

(41) ʔantaḍir-u duxuul-a al-ʔustaað-i (Al-Nadiri, 2005, p. 93)
waiting-I entering(M.S.)-ACC DEF-teacher-GEN
'I am waiting for the teacher to enter' or 'I am waiting for the entering of the teacher'

The maṣdar *duxuul* 'entering' (for the intransitive verb *daxala* 'he entered') occurs in a position occupied by an object noun (notice the accusative Case value on the maṣdar). The noun *al-ʔustaað-i* 'DEF-teacher-gen' which follows the maṣdar *duxuul* 'entering' bears a genitive Case value. Together, the maṣdar *duxuul*, as well as the noun *al-ʔustaað*, seem to form a CS-like construction. Despite that the noun *al-ʔustaað* bears genitive Case and functions as the subject (i.e., theta marked as an agent) for the maṣdar *duxuul* 'entering', traditional grammarians (e.g., Al-Nadiri, 2005) still regard the Case as nominative.

On the other hand, if the verb is transitive, then the object of its maṣdar takes an accusative Case value:

(42) yasurru-ni fahmu-ka ad-dars-a (Al-Nadiri, 2005, p. 93)
pleased-me understanding-you DEF-lesson-ACC
'It pleases me (that) you are understanding the lesson' or 'your understanding of the lesson, pleases me'

Traditional grammarians argue that the accusative Case value on the noun *ad-dars* 'DEF-lesson' is assigned by the maṣdar *fahm* (for the verb *fahima* 'he understood'). (Notice that

-ka is analyzed as subject for the maṣdar, even though it bears genitive Case).

Also, like verbs, maṣdars can be modified by adverbs:

(43) ḍarb-a aṭ-ṭifl-i bi-šidd-at-i-n xaṭaʔ-u-n
hitting-ACC DEF-child-GEN with-force-F.S.-GEN-INDEF wrong-NOM-INDEF
'Hitting the child forcefully is wrong'

A complex event nominal such as *ḍarb* 'hitting(M.S.)' in (43), as opposed to a simplex event nominal (see, e.g., (37)), is modified by the adverbial element *bi-šidd-at-i-n*.

A characteristic of a complex event nominal is that it can be replaced by a verb which carries the same meaning and it can be preceded by *ʔan* 'that,'[232] as in:

(44) yasurru-ni *ʔan* ta-fham-a ad-dars-a
pleased-me that you-understand-ACC DEF-lesson-ACC
It pleases me that you understand(ing) the lesson'

Having presented maṣdars, their semantic, and syntactic properties, the next subsection introduces an Agree-based analysis of these facts.

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232 *ʔan* is known in the literature as *ʔan al-maṣdariah*. It usually precedes a verb; however, both *ʔan* and the verb can be replaced by a maṣdar:

(i) ʔuriid-u ʔan ʔataʕallama ▶ ʔuriid-u at-taʕalluma
want-I that learning want-I DEF-learning
'I want to learn' 'I want to learn'

3.3 An Agree-based analysis

3.3.1. Noun-like maṣdars

I begin by considering the internal structure of noun-like maṣdars. The following examples are verbless:

(45) qiraaʔ-at-u al-kitaab-i al-jadiid-i mufiid-at-u-n
reading-F.S.-NOM DEF-book-GEN DEF-new(M.S.)-GEN beneficial-F.S.-NOM-INDEF
'reading the new book is beneficial'

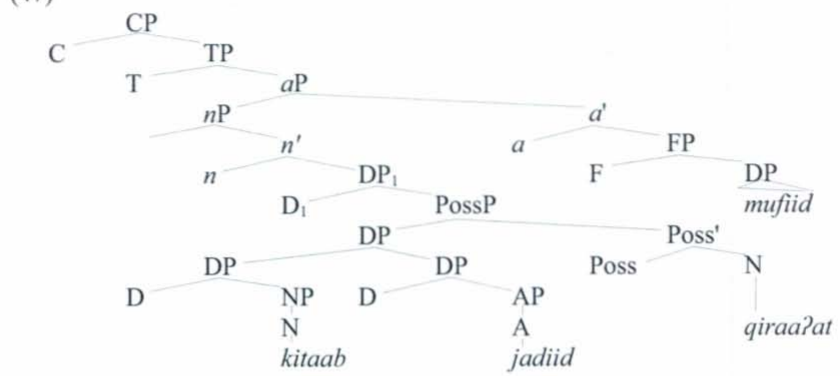
(46) laʕib-u al-kurat-i xaṭiir-u-n
playing(M.S)-NOM DEF-football-GEN dangerous(M.S.)-NOM-INDEF
'playing football is dangerous'

The maṣdars *qiraaʔat* 'reading' and *laʕib* 'playing' take the genitive nouns *al-kitaab* 'DEF-book' and *al-kurah* 'DEF-ball' as their complements. The genitive noun *al-kitaab* 'DEF-book' in (45) is modified by the attributive adjective *jadiid* 'new'. The predicative adjectives *mufiid* 'beneficial' and *xaṭiir* 'dangerous' apply to the maṣdars *qiraaʔat* and *laʕib*, respectively, and show agreement with these maṣdars in φ-features.

Given that the maṣdars in these examples exhibit noun-like behaviours, I assume that in their internal structure, they originate in the derivation as nouns. Based on the fact that

the maṣdar in (45) forms a CS-like construction with the following noun, I extend the analysis proposed for nominal CSs and propose the following representation for (45):

(47)



In (47), the maṣdar *qiraaʔat* 'reading' starts out as complement to the head Poss. As for the theta-role on the DP possessor *al-kitaab* 'DEF-book', I assume that the Poss head is able to assign this possessor a theta-role which, based on the meaning of the sentence, cannot be an *agent* role.

Marantz (1997) argues that lexical items are composed of category-neutral lexical roots, to which functional categories can be merged. According to Marantz, these functional categories are said to set the boundaries for the domains (or contexts) of special meanings. That is, the syntactic head *v*, which projects an external argument (i.e., projects an *agent*), serves as the boundary for the context of a special meaning, preventing anything above this head (boundary) from having an effect on the meaning of the root.

Considering Marantz's argument that the thematic relation between the possessor and the possessed DPs can be "reconstructed from the meaning of the possessor and possessed by themselves" (p. 218), and given that DP lacks a *v* head (i.e., it is unable to assign an *agent* theta-role), I assume, following Marantz, that the type of theta-role to be assigned to the genitive noun *al-kitaab* can be determined contextually.

Constructions containing verb-like maṣdars add support to the assumption that the head Poss assigns theta-role to the DP possessor (section 3.3.2. below.[233]) In that structure, *v* assigns the *agent* theta-role to *pro* in its spec, while the head Poss assigns the theta-role of the DP possessor in its spec.

In (47), as has been argued for nominal heads in CS constructions, the maṣdar raises first to Poss,[234] then to the head D_1, where it could receive a value for the definiteness feature (recall that the (in)definiteness on the head of a CS is determined by that of the possessor/genitive noun (i.e., *al-kitaab* 'DEF-book', in this example)). Finally, the maṣdar raises to the head *n*.

In the analysis of nominal CSs, it has been shown that syntactic operations such as FI do not occur prior to movement of the head of the CS; here, the argument is extended to (47)

233 Specifically around example (53) and its representation in (54).

234 I will maintain the use of a Poss label despite the fact that not every relation between the head of what looks like a CS and its genitive complement is that of possessiveness. For that, the label may be changed to suit whatever thematic relationship obtained between the head and the complement of a CS.

and no operation should take place until the maṣdar *qiraaʔat* reaches the head *n*.

Once the maṣdar reaches the head *n*, the phasal head *n* selects D_1, and forms a complex Probe with it. The *n*-D_1 Probe begins probing for Goals, and finds the possessor DP *al-kitaab* 'DEF-book'. Under Agree, the Probe *n*-D_1 values the [*u*Case] on this Goal (genitive); at the same time, receives valuation for its unvalued φ-features.[235] In *n*, the maṣdar is structurally accessible to higher Probes. Thus, the nominative Case value on the maṣdar *qiraaʔah* 'reading' reflects a successful Agree relation between the maṣdar and the C-T Probe.

Recall that the predicative adjective agrees (in φ-features) with the maṣdar *qiraaʔah* 'reading', thus the adjective must raise to the inner spec of *a*P in order to be close enough to the maṣdar. Under Scan, a copy of the φ-feature values of the maṣdar is shared with the adjective, and the overall result is a convergent derivation at LF.

The proposed analysis above can straightforwardly be extended to the following example, which is headed by the complementizer *ʔinna* 'that':

235 Recall that under Scan, the attributive adjective *jadiid* 'new' receives a copy of the φ-values on the DP *al-kitaab* 'DEF-book'. As a side-effect of Scan, the adjective receives a genitive Case value by the Probe *n*-D_1.

(48) ʔinna qiraaʔ-at-a al-kitaab-i al-jadiid-i mufiid-at-u-n
Comp reading-F.S.-ACC DEF-book-GEN DEF-new(M.S.)-GEN beneficial-F.S.-NOM-INDEF
'(It is confirmed) that reading (of) the new book is beneficial'

By now, we know that the accusative Case value on the maṣdar *qiraaʔaht* is valued by the C-T Probe containing the complementizer *ʔinna*.

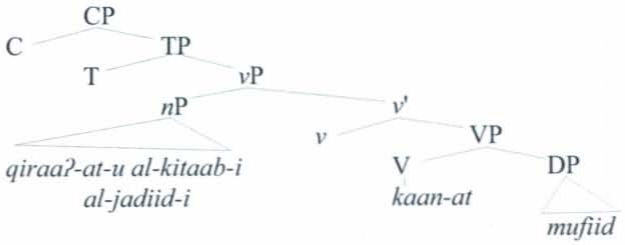
The structure in (45) can also be headed by the auxiliary verb *kaana* 'was', as in:

(49) kaan-at qiraaʔ-at-u al-kitaab-i al-jadiid-i mufiid-at-a-n
was-F.S. reading-F.S.-NOM DEF-book-GEN DEF-new(M.S.)-GEN beneficial-F.S.-ACC-INDEF
'Reading (of) the new book was beneficial'

In (49), the predicative adjective *mufiid* 'beneficial' bears an accusative Case value valued by the auxiliary *kaana* 'was'.

For the structure in (49), I propose that the *n*P, containing the maṣdar *qiraaʔah* 'reading' and its complement *al-kitaab-i al-jadiid-i* 'the new book', originates in the spec *v*P (cf. *n*P in (47), which originates in spec *a*P), as in:

(50)



In (50), the derivation of the maṣdar inside the *n*P proceeds in the same way proposed for (45) and (48). Note, however, that the predicative adjective *mufiid* 'beneficial' is not headed by a phasal *a*P; instead, the DP heading it is merged directly with the lexical verb *kaana*, thus reflecting the accusative Case value on the adjective. As has been demonstrated elsewhere, the adjective must be raised to a point (i.e., inner spec of *v*P) where it can receive a copy of the φ-values of the maṣdar.

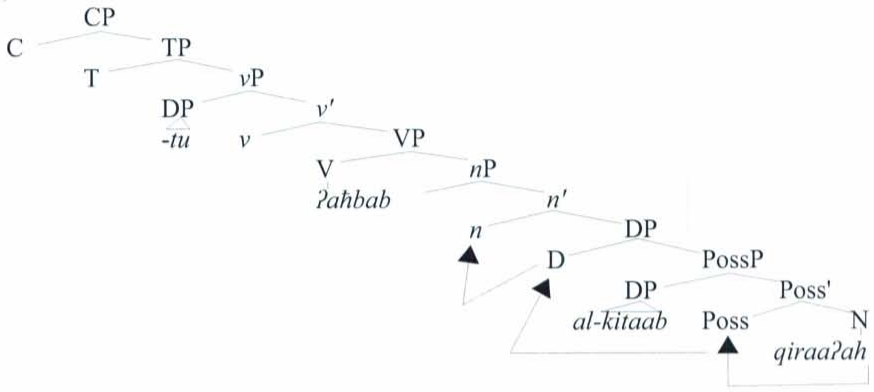
Like ordinary nouns, the masdar can appear as an object as in the following example:

(51)	ʔaħbab-tu	qiraaʔ-at-a	al-kitaab-i
	loved-I	reading-F.S.-ACC	DEF-book-GEN
	'I loved reading the book'		

The accusative Case value on the maṣdar *qiraaʔah* 'reading' comes from the verb *ʔaħbab-tu* 'loved-I'. As we have seen before, this maṣdar is noun-like, as it selects a genitive noun as its complement. The following representation accounts for the internal structure of

(51):

(52)



Prior to the application of major syntactic operations such as FI, the maṣdar raises to Poss, D, and to the phasal head *n*. At D, the maṣdar shares the [definite] value for the definiteness feature with the genitive noun *al-kitaab* 'DEF-book'.

Once the maṣdar reaches *n*, the phasal head *n* selects D and the complex Probe *n*-D probes for goals. The noun *al-kitaab* serves as a goal for this probe. As a result of Agree, the unvalued φ-features on the Probe receive valuation, and the unvalued Case feature on the goal receives valuation (genitive) by the *n*-D probe.

At the *v*P phasal level, the lexical verb is selected by the phasal head *v*, and the complex Probe *v*-V is formed. The Probe finds the raised maṣdar *qiraaʔah* in *n*, and as a result of a

successful Agree relation, the Probe receives valuation for its unvalued φ-features, and the unvalued Case feature on the maṣdar receives an accusative Case value.

At the CP level, the C-T Probe probes the subject *-tu* 'I' in spec *v*P, resulting in valuation for unvalued φ-features on the probe, and the unvalued Case on the subject (nominative).

3.3.2. Verb-like maṣdars

I now consider the internal structure of verb-like maṣdars. As has been shown, maṣdars in this type are able to assign accusative Case values to their objects. Consider the example in (53):

(53) ʔaqlaqa-nii ntiqaad-u r-rajul-i l-mašruuʕ-a
annoyed-me criticizing-nom def-man-gen def-project-acc
'The man's criticizing the project annoyed me' (Fassi-Fehri, 1993, p. 239)

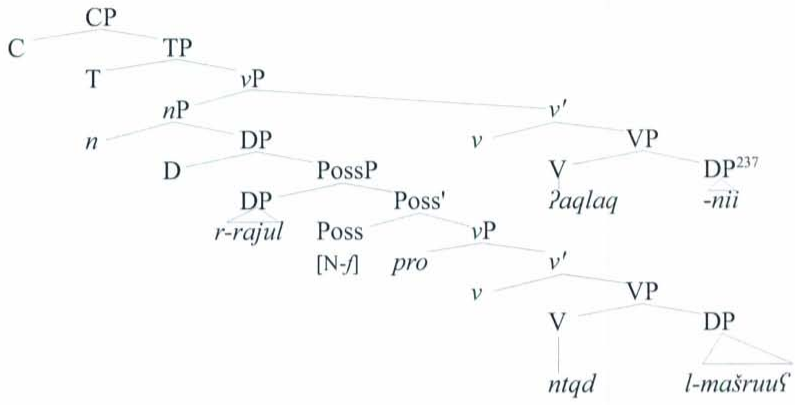
The maṣdar *ntiqaad* 'criticizing' forms a CS-like form with the following noun *r-rajul* 'def-man'.[236] Despite this, the maṣdar in this construction behaves like a verb (i.e., it has the ability to value the accusative Case on the noun object *l-mašruuʕ* 'def-project').

Given this dual nature of the maṣdar, I argue that the maṣdar *ntiqaad* in (53) starts out in the derivation as a verb and undergoes nominalization at a higher point in the derivation.

236 Traditional grammarians analyze the noun *r-rajul* as a subject for the maṣdar, despite that it bears a genitive Case value.

Consider the following representation for the structure in (53):

(54)



(54) shows the whole phrase (headed by *n*P) *ntiqaad-u r-rajul-i l-mašruuʕ-a* originating in the spec position of the the phasal *v*P. Following Fassi-Fehri (1993) and Kremers (2003), I propose that the lexical root *ntqd* of the maṣdar *ntiqaad* 'criticizing' is generated under V, which takes the DP *l-mašruuʕ* 'def-project' as its complement. In conformity with Burzio's Generalization, I assume a small *pro* in spec *v*P (as an external argument), allowing the verb to assign an accusative Case value to its object. Note that an *agent* theta-role is assigned to *pro* by *v*. That said, the head Poss assigns a theta-role to the genitive noun *r-rajul* 'def-man' in its spec.

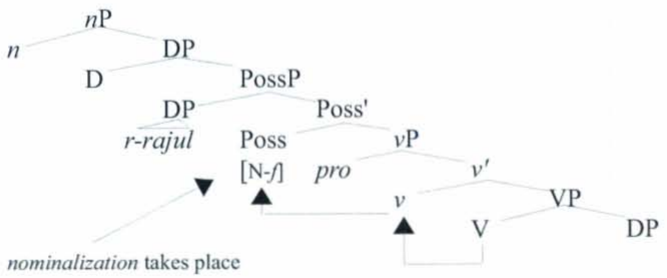
Following Fassi-Fehri's analysis of maṣdars, I further assume the existence of a special,

237 The objective pronoun *-nii* 'me' cliticizes onto the verb *ʔaqlaq* 'annoyed', and raises with the verb to T, later in the derivation.

semantic feature which converts a verbal root into a nominal element. I will refer to this feature as the nominalization *feature* or (N-*f*) (cf. event-affix (E-Af) in Fassi-Fehri's analysis). I will also assume that this feature is under the head Poss, so that Poss encodes nominalization. The derivation of (53) thus proceeds as follows. In a typical FI relation, the phasal head *v* transfers all of its features to V. The complex *v*-V probes the object noun *l-mašruuʕ* 'def-project', which receives the accusative Case value in valuation of its [*u*Case] feature, and the *v*-V Probe receives valuation for its [uφ] features.

The verbal root *ntqd* moves from V to *v* and continues to raise to the head Poss. At Poss, the verbal root *ntqd* converts into a nominalized element by virtue of the nominalization feature [N-*f*] on Poss:

(55)



Retaining an earlier assumption I made (for participles) I assume that nominalization of an element produces an "ordinary" noun. In other words, the nominalized element bears the properties usually borne by nouns (i.e., φ-features, and an [*u*Case] feature). In this

sense, a nominalized element acts as if it has just entered the derivation from the lexicon.

Next, just like the head of a nominal and/or adjectival CS, the nominalized element *ntiqaad* raises from Poss to the head D. At D, *ntiqaad* shares the definite value for the definiteness feature with the DP *r-rajul* 'def-man' (i.e., *definiteness inheritance*). It then raises to the head *n*.

The phasal head *n* selects D, and the Probe *n*-D starts probing for Goals. The probe finds the DP in spec PossP, and receives valuation for its unvalued φ-features; concurrently, the Goal *r-rajul* receives a genitive Case value, as a side-effect of a successful Agree relation between *n*-D and this DP.

At *n*, the moved nominalized element is at the edge of the *n*P phase, where it becomes accessible to higher probes. That is, it is now accessible to the C-T Probe, and when probed, the [*u*Case] value on the nominalized element will be valued nominative by the C-T Probe.

Also, under (54), the object pronoun *-nii* 'me' receives an accusative Case value from the *v*-V Probe. At the same time, the *v*-V also receives valuation for its unvalued φ-features from this pronoun. The result is a convergent derivation at LF.

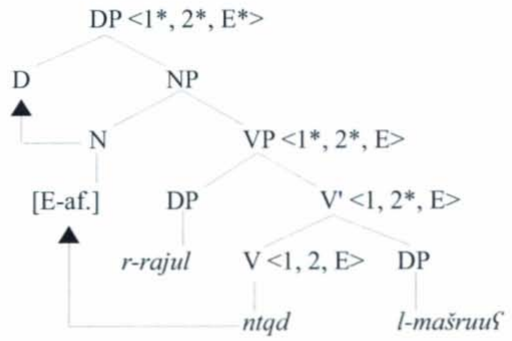
Finally, I compare my analysis of maṣdars with those proposed by Fassi-Fehri (1993) and

Kremers (2003). The dual nature of maṣdars (i.e., the ability to form a CS and assign accusative Case to an object) has been a subject of investigation for many researchers. For example, in Fassi-Fehri's (1993) analysis of maṣdars, he argues that the maṣdar *ntiqaad* 'criticizing' in example (53), repeated here as (56), is a nominalized verb:

(56) ʔaqlaqa-nii ntiqaad-u r-rajul-i l-mašruuʕ-a
annoyed-me criticizing-nom def-man-gen def-project-acc
'The man's criticizing the project annoyed me' (Fassi-Fehri, 1993 p. 239)

In other words, the accusative Case value on the object *l-mašruuʕ* 'def-project' must have come from a verbal source, and the maṣdar must project a VP structure. The V of this VP gets nominalized at a higher point in the derivation; that is, after it raises and merges with a nominalizer Event-Affix (E-af), which heads a nominal projection (Fassi-Fehri, p. 240): (Note that E indicates the thematic structure)

(57)



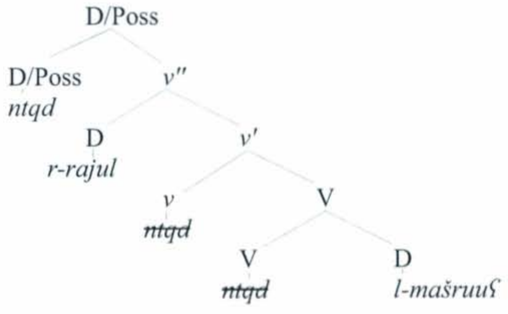
According to Fassi-Fehri, the consonantal V head raises to N, to host the affix (E-af.). At

this level, the structure becomes nominalized. To support the article, the head N (the maṣdar) raises higher to D. The genitive Case on the thematic subject *r-rajul* 'def-man' is assigned by D[238] in a spec-head configuration.

For the following example, Kremers (p. 137) proposes the representation in (59):

(58) ntiqaad-u r-rajul-i l-mašruuʕ-a
criticizing-NOM def-man-GEN def-project-ACC
'the man's criticizing the project'

(59)



Following the general principles of the MP, Kremers argues that the accusative Case on the object *l-mašruuʕ* 'def-project' is assigned by the small *v*. The lexical, root V raises to *v* and then to D/Poss.[239]

238 For Fassi-Fehri, this is obtained at LF, in Arabic (p. 245).
239 Kremers (p. 136) states that the switch from a verbal projection into a nominal one, but not vice versa, is supported by data from Germanic and Romance languages, in addition to Arabic.

Summary

This chapter has provided an Agree-based analyses for Arabic participles and maṣdars. Like other adjectives in Arabic, participles inflect for Case, agreement features, and definiteness. Also, like nouns, participles can take genitive nouns as complements, thus forming a CS-like construction. Arabic participles function like verbs: they are able to assign accusative Case values to their objects. For participles, I argue that they originate in the derivation as verbal roots, but convert into adjectival elements upon raising to a head hosting the adjectivalizer feature (A-*f*).

Like participles, maṣdars inflect for Case, agreement, and definiteness. In addition, maṣdars can have a verbal-function as well as a nominal-function. When functioning as a verb, the maṣdar is able to assign accusative Case to its object. But, when functioning as a noun, the maṣdar selects a genitive complement (i.e., forms a CS-like construction with its complement). I argue that in their verbal function, maṣdars enter the derivation as a verbal root, which becomes nominalized upon raising to a head carrying the nominalization feature (N-*f*).

The next section summarizes the main arguments made in this thesis and the theoretical implications which follow. I also sketch on the future direction the proposed version of Agree could take.

4. Conclusions and implications

The main goal of this thesis has been to present an analysis which takes the syntactic process Agree as the main mechanism of valuation for the Case and agreement features in Arabic APs. The data shows that Arabic Adjectival inflection is problematic not only for the current, standard version of the Agree theory (as proposed in Chomsky, 2005, 2007, 2008), but also for other modified versions of Agree (e.g., Baker, 2008; P&T, 2007). Specifically, simple observations of the Arabic AP shows that agreement in Case and φ-feature values (i.e., [Number] and [Gender]) between a noun and an adjectival element cannot be accounted for without understanding the abstract agreement relation between the elements involved.

This thesis has examined the close association of Case and φ-features in the Agree process. For Chomsky, Case and agreement features must apply together; however, we have seen that there are constructions in Arabic where this type of association is disrupted, meaning that each operates independently. For example, adjectival Goals of the types (1) and (2) (i.e., following the assumption that they come from the lexicon with no, or only one, valued φ-features) indicate that Case and agreement features can operate temporarily independently. In other words, the [*u*Case] feature on an adjectival Goal is partially valued/deleted while φ-features on the Probe must wait until values for φ-

features are provided, thus the association between Case and φ-features is temporarily disrupted.

Given that adjectival Probes lack the [Person] feature, and extending Chomsky's notion of defective Probes, one would assume that adjectival Probes are defective; that is, they are not able to value an [*u*Case] on a Goal. In this thesis, however, I have argued that adjectival Probes are non-defective, meaning that even though they lack the [Person] feature, they are still complete (non-defective) for an adjectival Probe. In this respect, an adjectival Probe can be defective if it lacks one or both of the features [Number] and [Gender]. Only in this case will the Probe be unable to value an unvalued Case feature on a Goal.

According to Chomsky, Spell-Out must apply at certain points in the derivation (i.e., the complement of a phase is spelled out separately). The data from Arabic APs shows that if Spell-Out is to always occur at such a point, the derivation will crash; specifically, at the point where Spell-Out should occur, the complement of an adjectival phase still bears uninterpretable feature(s), thus when spelled out, it will not have interpretation at the LF.

However, the thesis offers a solution to this problem: It argues that elements such as adjectives, which lack values for their φ-features, force a delay in Spell-Out by changing the point where Spell-Out should occur, thus prolonging the lifespan of a phase until these elements receive values. This way, a crash at LF is avoided. The implication of this

notion shifts the focus to the ability of lexical elements to determine the point where Spell-Out may or may not occur, while maintaining the basic premise of phase-driven assumption of Value-Transfer simultaneity and PIC, as formulated by Richards (2007b).

This thesis offers the possibility of partial deletion of uninterpretable/unvalued features. Specifically, a pronominal and/or adjectival element, which is argued to have come from the lexicon with no values for its φ-features, will have its unvalued Case feature partially deleted by a Probe until this pronoun or adjective receives a copy for these φ-values, and thus becomes able to value the [*u*φ] features on that Probe. In fact, Case-R reflects this notion of partial deletion in the sense that it deletes (and subsequently reserves) the [*u*Case] feature of a pronominal and/or adjectival Goal(s).

4.1 Future research

The analysis developed in this thesis can be extended to other types of agreement in Arabic; for example, subject-verb agreement relation in Arabic, which has received a lot of attention in the literature. Agreement between a verb and its subject varies based on where the subject appears in relation to the verb; that is, if the subject appears pre-verbally, then a state of full agreement between the subject and the verb (i.e., in [Number], [Gender], and [Person]) is attested. But, if the subject appears post-verbally, then agreement between these two elements is limited to [Gender] and [Person], but not

[Number] (i.e., the verb is always [singular]):

(60) ʔakal-a al-ʔawlaad-u aṭ-ṭaʕaam-a
ate-3M.S. DEF-boys-NOM DEF-food-ACC
'The boys ate the food'

(61) al-ʔawlaad-u ʔakal-u aṭ-ṭaʕaam-a
DEF-boys-NOM ate-3M.Pl. DEF-food-ACC
'The boys ate the food'

It is anticipated that the core proposals this thesis offers can be extended to other dialects of spoken Arabic as well as cross-linguistically. Languages with rich noun-adjective agreement systems (e.g., Russian) would seem particularly suited to the analysis I have developed in this thesis.

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